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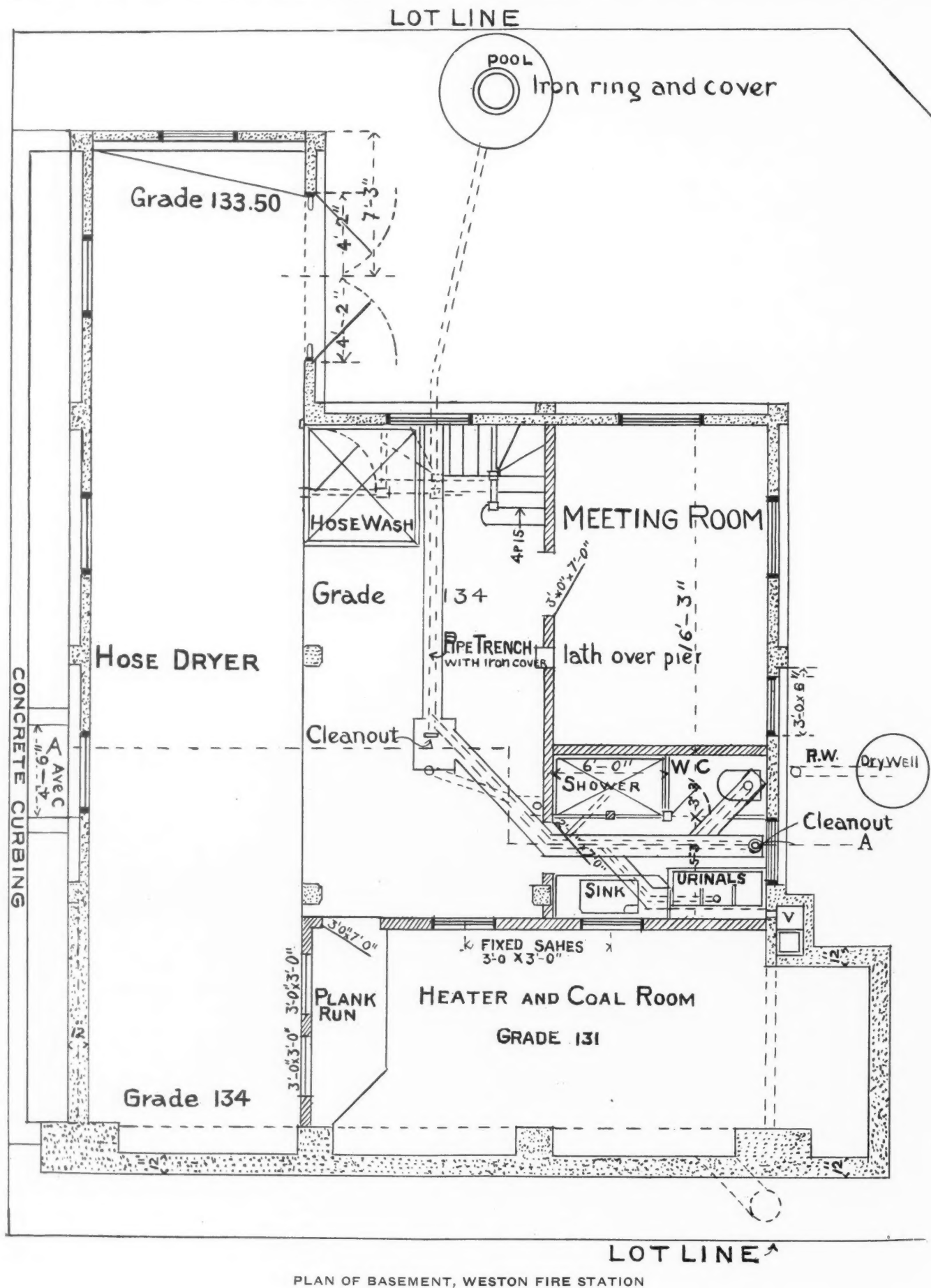


THE town of Weston, Mass., a suburb of Boston, about twelve miles from that city, has a population of about 2,500. The population is scattered over a considerable area, most of the territory being devoted to farming and country estates. The matter of fire protection in the town is rendered more difficult by the extent of the territory to be covered combined with the small expense which might be considered to be warranted by the population. A central fire station is located at the point where the population is most concentrated; but about four miles from the center of the town is a sub-center called Kendall Green, for which more adequate fire protection was deemed necessary than could be furnished from the existing station four miles away. The town therefore located a sub-station

at this point, housing the apparatus in a building rented from private parties. Last year a regular fire station was built to furnish adequate quarters. An effort was made to give it an appearance which would be sufficiently artistic for its surroundings; and the station, which has recently been completed, was built of reinforced concrete, simple in outline, but of attractive proportions. It consists of one story and a basement, the latter being rendered the more practicable in that the lot falls away rapidly below the street level. The building is about 36 feet square, with an extension at the rear 14 feet long and 12 feet wide; the extension having a second floor which contains the sleeping quarters of the one attendant. The apparatus is kept on the main floor. No arrangements for stabling horses

were made, since these are procured at a nearby stable, whereby the necessity of maintaining them continuously, with its attendant expenses, is avoided.

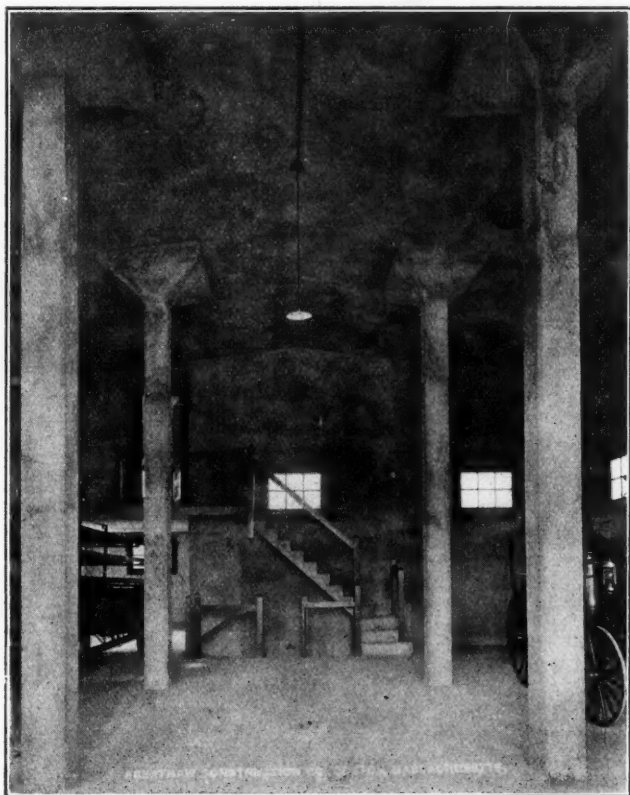
The apparatus room has a clear height of 17 feet and the basement a height of 9 feet. The main floor slopes slightly toward the center, and the machines are



washed here, the wash-water draining to the center where a pipe is provided for removing it. Stairs at the rear lead from this floor to the basement. In the basement are the room for the hot water heating apparatus, a lavatory and shower bath. A clear space 52 feet long by 12 feet wide is provided in the basement for washing and drying the hose, extending the entire depth of the building. In this room a system of racks is provided which has a capacity of 600 to 800 feet of hose at one time. Entrance to the dryer room may be had through a basement door at the rear. The hose wash is reached by a trap in the main floor. Water from the lavatory, shower baths, etc., drains to a cesspool in the rear of the station.

The doors are of the double wing type, and are lighted at night by electric lights placed under the eaves. A side entrance is provided for the keeper.

The foundation walls are 12 inches thick and are carried down about 6 feet below the ground, with footings 18 inches thick at the bottom. The main walls are 6 inches thick. The floor and roof are supported by columns, including those integral with the walls, which are spaced 12 feet on centers and are 12 inches by 12 inches square. The columns are provided with caps 4 feet square which furnish extensive bearing surface for the floor and roof. Four $\frac{5}{8}$ -inch bars are used for reinforcing the corners of the columns. The roof is of concrete reinforced with $\frac{3}{8}$ -inch cold twisted bars spaced 4 inches on centers close to the under surface; the roof slabs spanning the space between the columns. The window frames and sashes, door frames and doors, and the stair railings and posts contain the only wood to be found in the building. The entire building, therefore, is practically unflammable.



INTERIOR, MAIN FLOOR, LOOKING TOWARD THE REAR

A cut-off wall, two feet from the side wall foundation of the building on the side of the hose dryer room, prevents washing out by rain water as there is considerable slope of the lot to the rear on this side. To furnish ventilation for the hose dryer room an air-shaft is constructed between this cut-off wall and the station footing.

The outside surface of the walls above the door arches and the fronts of the corner columns are finished with rough picked panels with smoothed troweled borders. Cast concrete scroll ornaments are placed on the corner posts. The reinforced concrete roof overhangs the main walls on all sides; and the general effect is one simple but pleasing in appearance. The building was constructed by Aberthaw Construction Company, of Boston, after designs by Alex S. Jenney, architect, of the same city.

The equipment consists of one ladder truck, with six pony chemicals of three gallons capacity each; and one hose carriage carrying two pony chemicals and 1,000 feet of $2\frac{1}{2}$ -inch hose. The town owns no steamer, but uses the direct water pressure which ranges from 54 to 100 pounds. The central station contains a similar equipment. The Department is entirely on a volunteer basis.

TESTING WATER PIPE JOINTS

THE success attained in Grand Forks, N. D., in obtaining tight joints in water main extensions was made the subject of a brief paper before the Illinois Society of Engineers and Surveyors, by Mr. J. J. Smith, City Engineer, of that city. As soon as any extension has been laid and caulked, and before back-filling has begun, the joints are tested by a hydrostatic pressure of 200 pounds per square inch, which is applied by a hand pump attached to a fire hydrant, the pressure being read by a pressure gauge attached to the hydrant. When the pressure has reached 200 pounds, all valves being closed tight, pumping is stopped and the pressure is allowed to drop, the rate of decrease being noted. Mains which were laid in 1892 showed a drop of 20 to 40 pounds per minute; but since 1905 extensions have been laid to fixed lines and grades and an inspector employed to oversee the work, which has resulted in much more satisfactory tests. Of several 6-inch lines one averaged $\frac{1}{2}$ pound drop per minute, one 0.65 pound and one 1 pound; the drop being recorded during about 2 to $2\frac{1}{2}$ hours in each case; the first two lines being about 400 feet and the last about 1,200 feet long. One 16-inch main 400 feet long dropped from 200 pounds to 185 pounds in 20 minutes and remained at the latter pressure without drop for 5 minutes; a loss of $\frac{3}{4}$ pound per minute. In general the tests made since 1905 showed an average drop of from 0.2 to 5.3 pounds. It is found that work done during the summer months stands the test better than that done in the winter.

A machine for testing high pressure pipe in this way, where a maximum rate of leakage of 4 gallons in 24 hours was allowed, was used in laying New York's high pressure system, as described by us in the issue of February 27, 1907.

THE LOS ANGELES AQUEDUCT

Unusual Construction Methods for Unusual Conditions—
"Caterpillar" Traction Engines—Suction Dredges
and Hydraulic Dredging—Steam Shovels

By EDWARD P. BAILEY

THE largest water works scheme now under construction in this country, excepting the increased water supply of New York City, is the aqueduct which is to bring water to Los Angeles, Cal., from the distant mountains. As stated in these columns on December 23, the preliminary work has been done and actual construction has been gotten well under way. The general problem of the methods to be employed has practically been solved, and much of the work is now merely a matter of detail; although there are, of course, engineering difficulties arising from time to time.

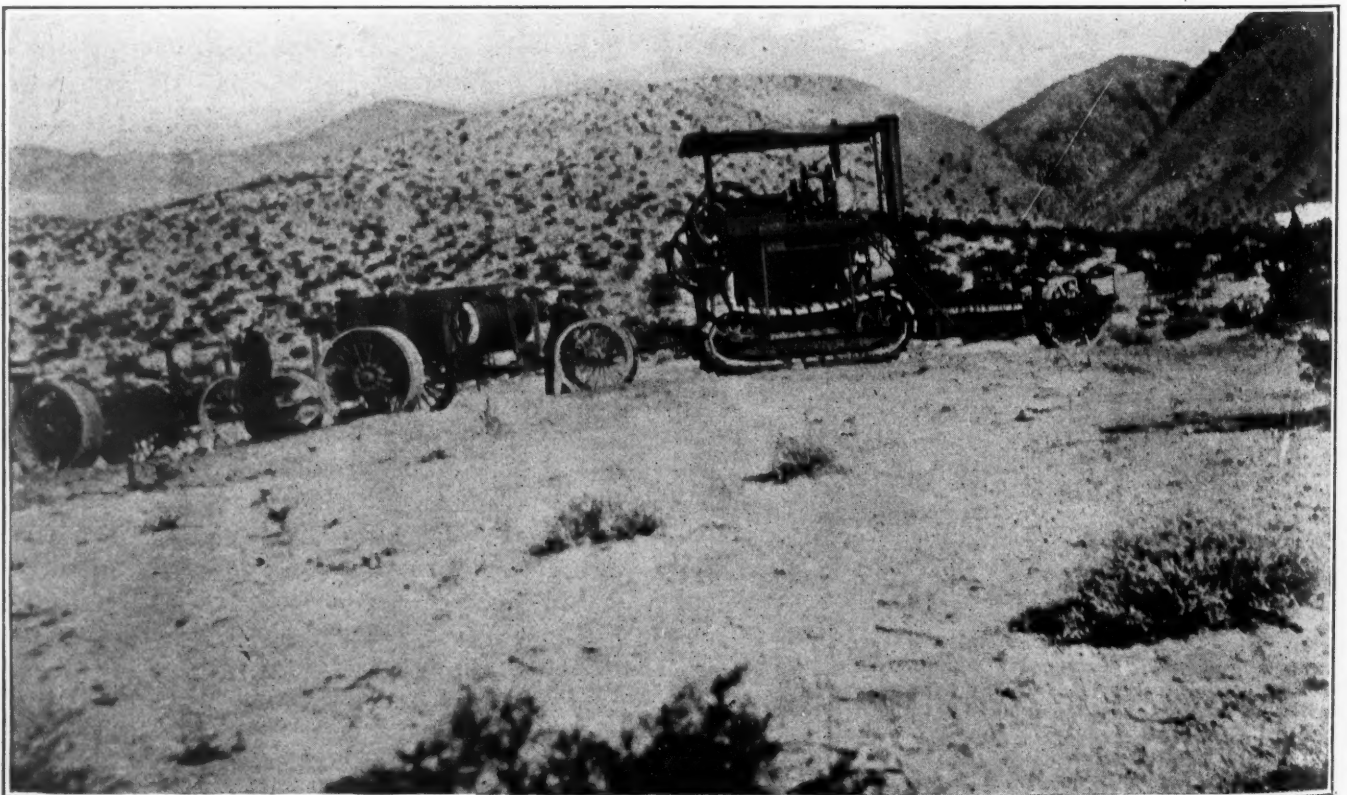
Aside from the magnitude of the undertaking there were many natural conditions to be contended with which made the work of unusual difficulty; the worst of these being those which operated against transportation. When about eight months ago the Aqueduct engineers began to experiment with various devices to provide a cheap method of transportation, it was found that traction engines were not suitable on account of the sand depth. Trials were made with the "endless" traction engine designed by P. E. Holt, of Stockton, Cal., and it was adopted as it was found that it could without difficulty negotiate a $17\frac{1}{2}$ per cent. grade under conditions which made it difficult for a horse with an empty buggy. The engine has been tried out with both steam and gasoline power. The chief difficulty at first was arranging for its supplies of water and fuel, full

supplies having to be hauled for the whole trip. Under these circumstances the cost of hauling freight on an otherwise almost impassable road was 32 cents per ton-mile. This cost was estimated on loads of $3\frac{3}{4}$ to $8\frac{1}{2}$ tons on an uphill ridge road with maximum grade of 7 per cent.; ten days operation equalling 656 ton-miles of freight haul, at a total cost of \$212. The oil consumed for that period was 2,200 gallons, costing 3.1 cents per gallon.

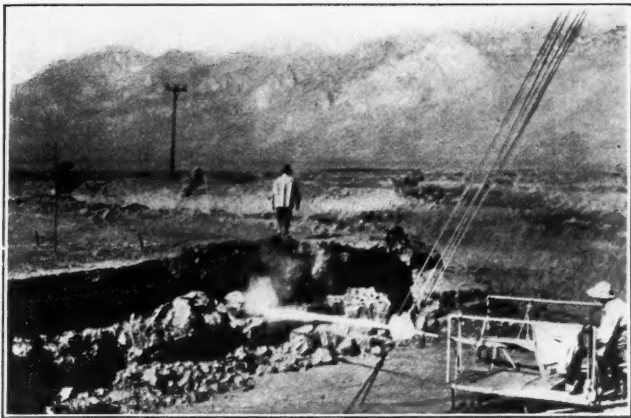
Under the plan now employed the maximum load carried has been 25 tons, with an average speed for 8-hour days of 12 miles loaded and returning empty; giving an average service per trip of 300 ton-miles, at an operating cost of \$54.60; making an average of 18 1-5 cents per ton-mile. To secure this lower operating cost it was found necessary to have three relays of cars to provide fuel, one set at the loading station, another set at the unloading station, and a third set midway. Three of these engines, called "caterpillars," are now in successful operation.

The first twenty miles of the aqueduct lies at approximately the lowest elevation of the valley and through a strip of land which, at certain seasons of the year, is overflowed by torrents and streams. Even in the hottest period of summer, when the air is extremely dry, the land here is always damp and soggy. It was accordingly decided to employ on this work the hydraulic dredge, which was built at Los Angeles under the supervision of William Mulholland, Chief Engineer, and Rod. MacKay, mechanical instructor. The first one was placed in commission during May, 1908. It excavates a ditch 10 feet in depth and an average of 40 feet wide.

The top soil is a sandy and gravelly loam with a



"CATERPILLAR" OR PADDLE WHEEL ENGINE USED ON JAWBONE DIVISION



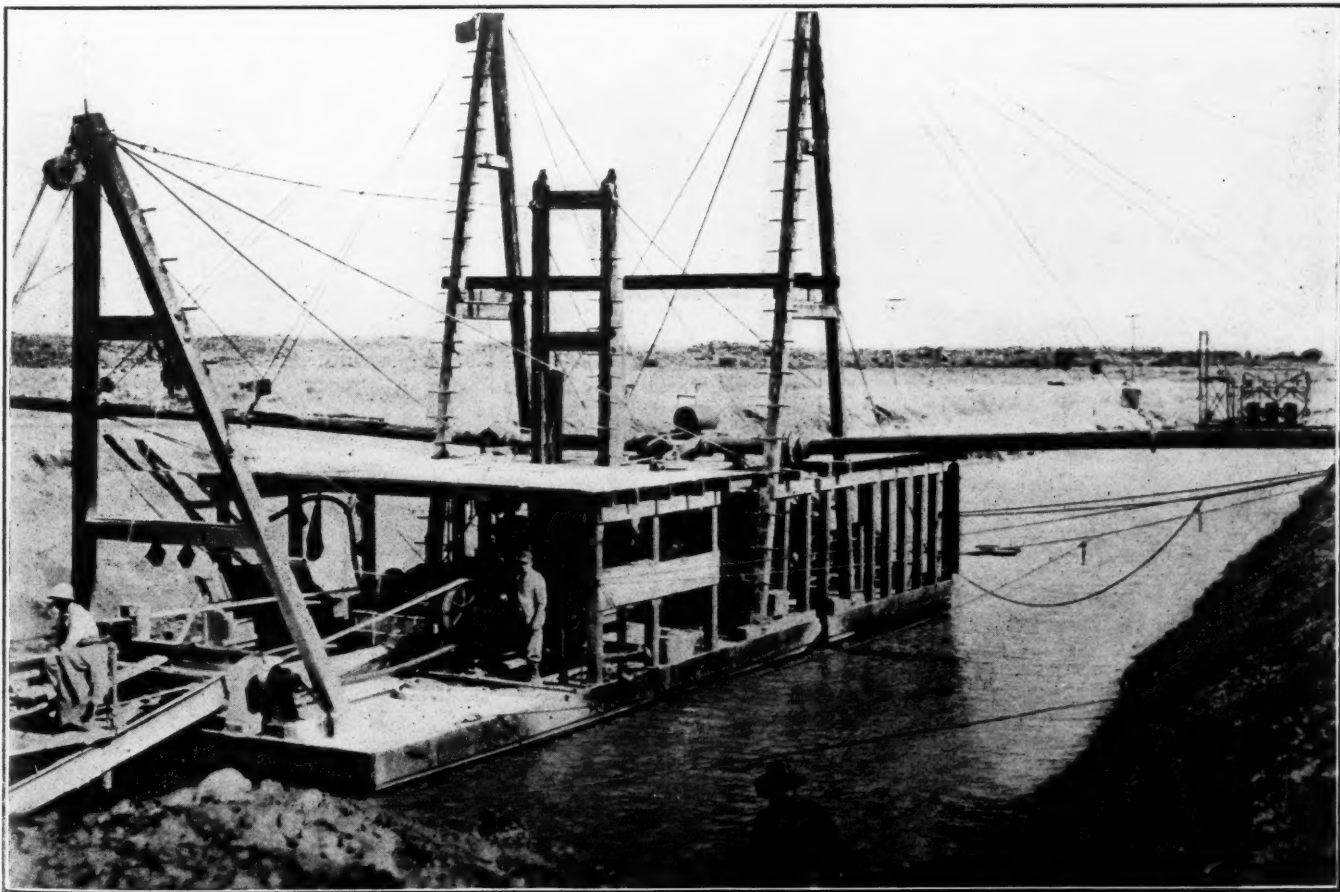
SUCTION DREDGE UNDERCUTTING BANK

mixture of clay, changing suddenly below to stiff adobe. The upper part of the ditch is excavated by means of a stream of water driven through a fire hose nozzle, at 90 pounds per square inch, which washes down the upper four or five feet of earth. The adobe is excavated by means of a pair of cutters revolving at a high rate of speed, each cutter containing five knives, fashioned on the principle of a plow-share. By this means the soil is disintegrated and rendered into a condition in which it can be handled by a suction pump, which discharges it through pipes onto the banks. This dredge is capable of making an average of 60 feet per day of completed canal.

The dredge has a 20 x 55 foot steel hull, having a ladder frame at the front end to carry the suction pipe of the pump. The pump is of the 12-inch Byron Jackson centrifugal type, built specially for dredging pur-

poses. The discharge of the pump is attached to a vertical Y connection, which permits the output of the pump to be delivered on either side or both sides of the channel in which the dredge is working. The pump is belt driven by a 75-horsepower 550-volt variable speed induction motor, the high voltage current from the transmission line being stepped down to 550 volts by transformers, towed on a float following the dredge. It is driven by a hydro-electric plant of 125 horsepower situated at Division Creek, some three or four miles from the present location of the dredging operations. It can operate in three feet of water. It is at present working at the intake about ten miles north of Independence. Another dredge is now under construction, on the same lines as this one, but having greater capacity, which is expected to be in operation within a few months at a point four miles south of Independence, and will work towards dredge No. 1. It is proposed to work the dredges night and day during the summer months.

A force of fifty men was put at work recently on the line of the aqueduct, about four miles north of Willow Springs, in connection with the big Austin excavator now installed there, the results with which are said to have been highly satisfactory. It demonstrated a capacity of excavating four square yards a minute, whereas the guarantee was for only fifty yards an hour. Furthermore, the work was in the hardest kind of ground, and the test was about as severe as it could have been made. This machine was built in Chicago, under the supervision of one of Chief Engineer Mul-



SUCTION DREDGE ON LOS ANGELES AQUEDUCT

holland's assistants. Its operation differs from that of the ordinary steam shovel in that it shapes the ditch as it proceeds and no trimming is required.

An electrical shovel, Model 40, of the Marion Steam Shovel Co., of Ohio, is now in operation in the cut and cover portion of the aqueduct, of which there are 38,000 feet. A rate of progress of 60 feet a day may reasonably be expected, which would mean the completion of about 16,000 feet of this work by the end of the fiscal year.

Mojave division, No. 7, is twenty-eight miles long. Work on this has been begun at a point where the aqueduct intersects the Southern Pacific Railway, about four miles north of Mojave. About 4,000 feet of conduit has been completed so far, and the rate of progress should be maintained at about 2,000 feet a month for each shovel. By November, 1909, it is planned to have 5,000 men at work with ten steam and electric shovels and other excavation machinery. Moreover it is expected that work will be in progress on the tunnels at from seventy-five to one hundred different points.

The year 1909 is likely to witness some notable developments in the construction work on the Los Angeles Aqueduct. Heretofore the operations have been largely along the line of preparation, but from now on



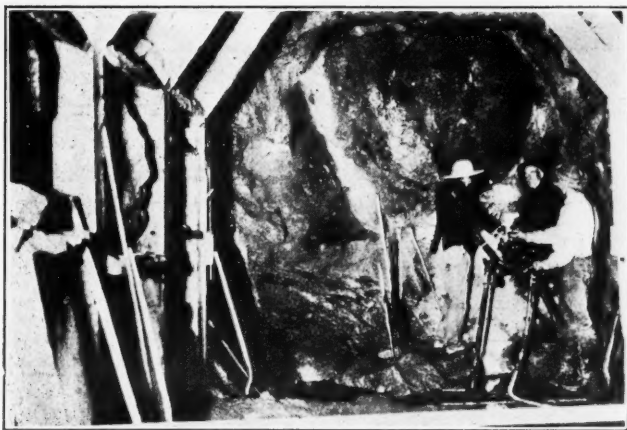
MARION STEAM SHOVEL

definite progress on the big ditch and conduit that are to convey the waters of the Owens River to this city may be expected. Chief Engineer Mulholland has promised that within the next four or five months the rate of progress will be fully 1,000 feet a day, and that the water will be flowing in the mains of Los Angeles early in the spring of 1913.

To accomplish these results will mean a large addition to the force of workmen in the valley, and ar-



EXCAVATION IN LOS ANGELES AQUEDUCT



LEYNER DRILLS AT WORK IN TUNNEL

rangements towards this end are now being made. It is estimated that the expenses in 1909 will average about \$500,000 a month. There will, however, be no danger of any interference with the work because of a lack of funds.

Under its contract with Kountze Bros. and Leach & Co., of New York, the city will be able to deliver \$4,896,000 of aqueduct bonds this year, the first installment of \$816,000 having been due Feb. 1. The deliveries are so arranged that, beginning with that date, an equal amount is to be taken by the bond buyers every sixty days, the last installment for the year being deliverable December, 1909. The buyers have the option, however, of calling for earlier deliveries than those specified, but in any event the city will sell the amount of bonds named during the year.

To the total of \$4,896,000 face value of the bonds must be added the premium of one-fourth of 1 per cent., amounting to \$12,240 more, so that the total proceeds to the city will be \$4,908,240. In addition to this the city has a surplus from last year's funds amounting to about \$900,000, which is being carried over into this year's account, which makes a grand total available for work in 1909 of more than \$5,800,000.

Large as the expenditures the coming year will be, the greater part of the money will remain here. More than half of the \$500,000 to be paid out each month will go for labor, and in the employment of workmen preference is always given to residents of Los Angeles.

A large part of the remainder of the money will be paid out for supplies, which will result in a direct benefit to the merchants of this city. It will be seen, therefore, that the aqueduct will be the means of adding an immense amount of money to that which is already flowing in through the regular channels of trade in Los Angeles and Southern California.

With almost \$6,000,000 available, it is quite likely that the Aqueduct Department will close the year with a considerable surplus. At the same time there is a possibility that the way will be opened for still greater progress on the aqueduct than that which has been mapped out, and in that event a greater sum for materials and labor will be required.

Every effort is being made to avoid extravagance, and the chief engineer hopes to keep the cost one or two million dollars below the authorized expenditure.

STERILIZATION BY OZONE

Experiments Made in Paris on Ozonizing Water by the Siemens-de Frise Apparatus—Itemized Results and Estimate of Cost

THE city of Paris has during the past two or three years been conducting experiments on the sterilization of water, and in 1907 a competition of sterilizing appliances was held by the city. In 1908, from March 30 to April 18, further experiments were made at Saint-Maur with de Frise's sterilizers, using a new type of ozonizer known as the Siemens-de Frise type. In these, ozonized air was forced into the sterilizing columns by means of an electrical pump using 1.675 kw per hour. The current was produced by a portable engine and dynamo, and the amount of electricity used was measured by instruments which had been standardized by the municipal department. In estimating the cost of operation, the cost of the current was taken as 0.11 francs (2.2 cents) per kw.-h. As the purified effluent left the apparatus 2 meters (6.56 feet) below the point at which the untreated water entered, the cost of raising the water back through that distance was added as a part of the cost of treatment.

During the first ten days six ozonizers were used; during the next six and a half days nine were used; during the last three and a half days twelve were used. The amount of water was measured by passing it over a weir. The ozonized air was delivered by an air pump, the piston of which had a diameter of 0.492 feet, giving an area of 0.1894 square feet, and the length of stroke was 0.656 feet. It was run at 145 strokes per minute, and, the efficiency being taken as 0.7, was estimated to be delivering 43 cubic meters (1518½ cubic feet) of air per hour. Cooling water was figured at 0.17 francs per cubic meter (\$129 per million gallons). The amount of this used was from 26½ to 53 gallons in ten hours for the twelve ozonizers. The cost of raising the treated water to the original level was estimated to be 0.0008 francs per cubic meter (equals 60.6 cents per million gallons). This cost is based on electric pumping with an efficiency of plant of 0.75 and a cost of 0.11 francs per kw.-h. The attendants consisted of an electrician and an assistant, the former being charged against the plant at the rate of 16 cents per hour and the latter at the rate of 12 cents.

Five series of tests were run, the first using water which had been previously filtered through a sand filter, the second using filtered water with which had been mixed considerable quantities of pathogenic cultures; the third again used filtered water, the fourth used filtered water mixed with about 18 per cent of turbid river water, and the fifth series used filtered water mixed with about 15 per cent of river water. The cost of treatment and the efficiency varied somewhat in the different series. The cost of attendants, pumping, cooling water, etc., was the same in each case; but the amount of electricity required increased gradually from the first to the fifth series, costing 0.0031, .0033, .0034, .0038 and .0045 francs per cubic meter for the five series, respec-

tively (\$2.35, \$2.50, \$2.57, \$2.97 and \$3.40 per million gallons). The total cost of operation varied from 0.0179 to 0.0193 francs per cubic meter, averaging 0.0184 (\$13.55 to \$14.61, averaging \$13.93). These costs include nothing for interest, depreciation or other fixed expenses, but are merely the operating expenses of the plant.

In order to establish cost under different conditions the quantities are given, which can be used in connection with local prices anywhere. The amount of electricity required varied from 2.8 kw.-h. for the filtered water to 4.1 kw.-h. for the most turbid water, averaging 3.3 kw.-h. per cubic meter. In English units this is equivalent to 10,600 kw.-h. and 12,490 kw.-h. per million gallons, respectively. The two attendants referred to operated a plant when purifying 264,000 gallons a day, and it is said could have taken care of a plant of several times this size. The raising of the water by electric pumping to its original level is estimated to use 7.2 watts per hour per cubic meter, or 17.25 kilowatts per hour per million gallons.

The report of the Chief Engineer of the Paris Municipal Department of Water Supply and Drainage, summarized above, is accompanied by one by Dr. Miquel, the chief of the Micrographical Service of the city, showing the bacteriological results obtained. According to this the water used in the first series of experiments had been filtered through sand at the rate of 2.4 meters, and contained an average of 255 bacteria per c. c., but showed no colon bacilli in 1,200 c. c. After passing through the sterilizer described above the number of bacteria was reduced to about 2 per c. c. In the second series a fresh culture of colon bacilli was introduced into the water, giving an estimated number of 10,875 bacilli per c. c. The average number of bacteria in the applied water throughout this test were 9860, with 4,429,000 colon bacilli in 400 c. c. The ozonized water contained an average of $1\frac{1}{2}$ bacteria per c. c. and 40 colon bacilli in 400 c. c., or about $\frac{1}{110,000}$ of the original number. In the third series, water filtered through sand was used,

but was run through the same pipe as in test 2 and continued to be infected with colon bacilli, the average number of the latter throughout the test being 50 in 400 c. c. The ozonized water showed no colon bacilli in 1,600 c. c.; and the total number of bacteria in the effluent averaged 2 per c. c. In the fourth test, in which filtered water was mixed with about 18 per cent. of river water, the raw water was dirty and contained an average of 10,735 bacteria per c. c., and 3,260 colon bacilli in 400 c. c. The ozonized water gave 35 bacteria per c. c. and no colon bacilli in 2,000 c. c. With the amount of river water diminished to 15 per cent, the number of bacteria decreased to about 5,195 per c. c. and 740 colon bacilli in 400 c. c.; while the ozonized water contained an average of 7 bacteria per c. c. and no colon bacilli. It is seen from the above that the ozone removed all the colon bacilli except in the second series, where fresh cultures of these were introduced in large quantities. It is seen, however, that where the water contained as little as 18 per cent of turbid river water the efficiency was greatly diminished, although the amount of electricity used was appreciably increased, but even in this series the reduction of bacilli amounted to 99.68 per cent.

STREET LIGHTING FOR BELLEVUE, KY.

THE franchise for lighting the streets of the city of Bellevue, Ky., will expire next year, and before advertising for and awarding a new franchise the City Council decided to look into the possibility of a municipal plant and employed Geo. Hornung & Son, of Cincinnati, as consulting engineers, to report upon an estimate of the cost of a plant which would not only light the streets but would also be sufficient to handle a commercial load.

The plant recommended and reported upon does not, we believe, contain any unusual features; but the method of calculating the figures for setting forth the financial aspect of municipal ownership is interesting. The plant is designed to have a generating capacity of 150 kilowatts. The present lighting company operates 68 lamps for street lighting, these being 6.6-ampere, series, enclosed arc lamps. It has no franchise for commercial

ESTIMATED ANNUAL COST OF ARC LIGHTS AT BELLEVUE, KY.

When Deducting Annual Revenue From the Sum of the Annual Fixed Charges and Cost of Operating the Plant

Total Fixed Charges Taken Constant at \$4,272.00. Daily Average for Arc Load, 11 Hours; Incandescent Load, 3 Hours

COMMERCIAL LOAD	Operating and Fixed Charges	COMMERCIAL CHARGE 10 CTS. PER KW. H.			COMMERCIAL CHARGE 8 CTS. PER KW. H.			COMMERCIAL CHARGE 6 CTS. PER KW. H.		
		Revenue From Com'c'l Service	Total Expense of Arc Lamps	Cost per Lamp	Revenue From Com'c'l Service	Total Expense of Arc Lamps	Cost per Lamp	Revenue From Com'c'l Service	Total Expense of Arc Lamps	Cost per Lamp
1000—16 c.p. Lamp Load..	\$10,347.00	\$5,722.00	\$4,625.00	\$62.50	\$4,577.00	\$5,770.00	\$77.83	\$3,433.00	\$6,914.00	\$93.43
1100—" " " " " "	10,390.00	6,294.00	4,096.00	55.35	5,035.00	5,355.00	72.37	3,775.00	6,615.00	89.93
1200—" " " " " "	10,433.00	6,866.00	3,567.00	48.20	5,493.00	4,940.00	66.75	4,119.00	6,314.00	85.32
1300—" " " " " "	10,476.00	7,438.00	3,038.00	41.05	5,951.00	4,525.00	61.14	4,463.00	6,013.00	81.25
1400—" " " " " "	10,519.00	8,009.00	2,510.00	33.92	6,409.00	4,110.00	55.54	4,806.00	5,713.00	77.20
1500—" " " " " "	10,562.00	8,581.00	1,981.00	26.77	6,867.00	3,695.00	49.93	5,149.00	5,413.00	73.14
1600—" " " " " "	10,605.00	9,153.00	1,452.00	19.62	7,324.00	3,281.00	44.33	5,493.00	5,112.00	69.08
1700—" " " " " "	10,648.00	9,725.00	923.00	12.47	7,782.00	2,866.00	38.73	5,836.00	4,812.00	65.03
Average cost per lamp per year.....				\$37.48			\$58.33			\$79.23

lighting, but furnishes current for about 3,000 16-c. p. incandescent lamps. The new plant is designed to operate 74 four-ampere Magnetite arc lamps for lighting the streets, and the remaining current is provided for commercial service. The estimated cost of the entire plant is \$33,286.

The arc lamps are estimated as burning an average of 11 hours per day and the incandescent lamps an average of three hours. It is also estimated that during the first year the commercial load will be equal to 1,000 16-c. p. lamps, and that it will increase annually by 10 per cent. of this amount. In order to determine what the arc lamps would cost, the revenue from the commercial lighting is subtracted from the operating and fixed charges; and the difference divided by the number of lamps is the estimated cost per lamp per year. The operating expenses include labor, coal, oil, waste, etc., at the power station; also lineman, clerk, office supplies, etc. The fixed charges include interest, taxes, sinking fund, maintenance and depreciation of all parts of the plant. The revenue from the commercial service was figured at three prices, 10 cents, 8 cents and 6 cents per kw.h. The table on the opposite page shows in detail the figures as above outlined for the first seven years of operation.

CO-OPERATION IN FIGHTING FIRES

Practice and Policy of Various Cities Relative to Assisting Others with Apparatus and Men—Methods of Transportation

If every city could, in the case of bad fires, call upon neighboring cities for the use of their apparatus, as companies are called from one district to another in large cities, protection against unusual conflagrations would be greatly increased. In order to learn just what had been done along this line, *Insurance Engineering* sent to about 200 cities the following questions:

(1.) What cities or towns would be likely to call on your department for help? (Please give distance.) (2.) How would apparatus and firemen be transported? (3.) How many pieces of apparatus and how many firemen do you think it would be prudent to send, as a rule? (4.) In the event of a bad fire at home, how would you communicate with the absent apparatus and firemen? (5.) What charge do you make for helping other places to fight fires, or what charge do you make for helping mills and factories outside of the fire limits?

The essential points of replies received from 118 cities are tabulated below. Co-operation implies uniformity of nozzle threads, and this table is an argument for the adoption of the Fire Underwriters' standard.

CO-OPERATIVE FIRE FIGHTING

PRACTICE OF A NUMBER OF CITIES IN ASSISTING NEIGHBORING COMMUNITIES TO FIGHT FIRES

NAME OF TOWN	PLACES LIKELY TO CALL ON DEPARTMENT FOR HELP			How Would Apparatus or Firemen be Transported?	HOW MANY MEN AND PIECES OF APPARATUS WOULD IT BE POSSIBLE TO SEND, AS A RULE?		How Could Absent Firemen be Communicated With?
	Min'm Distance	Max'm Distance	Number		Pieces of Apparatus	No. of Men	
Birmingham, Ala.	7	96	7	R. R.	1	11	Telegraph or 'Phone
Mobile, Ala.	14	180	3	R. R.	4	15	Telegraph or 'Phone
Montgomery, Ala.	14	96	4	R. R.	2	9	Telegraph
Little Rock, Ark.	12	60	4	Horse or R. R.	2	6	Telegraph or 'Phone
Los Angeles, Cal.	..	25	5	R. R. or trolley.	2	20	Telegraph or 'Phone
Sacramento, Cal.	24	52	3	R. R.	1	5	Telegraph
San Jose, Cal.	10	70	4	R. R.	2	12	Telegraph or 'Phone
Colorado Springs, Col.	3	75	4	Horse or R. R.	2	10	Tel., 'Phone or Auto
Bridgeport, Conn.	..	50	7	R. R.	2	16	Telegraph
Meriden, Conn.	..	..	4	R. R.	1	12	..
New Britain, Conn.	4	10	5	Horse	2	10	'Phone
New Haven, Conn.	10	38	4	R. R.	2	8	Telegraph or 'Phone
Waterbury, Conn.	6	30	10	R. R.	2	8	Tel., 'Phone or Auto
Jacksonville, Fla.	28	138	5	R. R.	1	10	Telegraph
Atlanta, Ga.	100	300	7	R. R.	2	12	Telegraph or 'Phone
Augusta, Ga.	1	17	4	Horse or R. R.	2	9	'Phone
Savannah, Ga.	78	172	4	R. R.	1	10	Telegraph or 'Phone
Aurora, Ill.	3	40	9	R. R.	2	5	Telegraph or 'Phone
Bloomington, Ind.	..	..	Any that call.	R. R.	2	8	Telegraph or 'Phone
East St. Louis, Ill.	4	6	5	Horse	2	12	'Phone
Elgin, Ill.	5	10	5	Horse or trolley.	2	8	'Phone
Joliet, Ill.	20	40	3	R. R.	2	6	Telegraph or 'Phone
Peoria, Ill.	3	48	95	R. R.	2	8	Telegraph or 'Phone
Rockford, Ill.	6	28	8	R. R.	1	10	'Phone
Springfield, Ill.	20	60	4	R. R.	3	8	'Phone
Anderson, Ind.	8	35	6	R. R.	1	5	Telegraph or 'Phone
Evansville, Ind.	..	..	12	R. R. or trolley.	2	..	Telegraph or 'Phone
Muncie, Ind.	..	20	8	R. R. or trolley.	2	6	'Phone
New Albany, Ind.	4	20	6	R. R.	..	6	'Phone
South Bend, Ind.	4	25	4	R. R. or trolley.	1	5	Telegraph or 'Phone
Burlington, Ia.	20	98	6	R. R.	1	5	Telegraph or 'Phone
Council Bluffs, Ia.	4	97	4	R. R.	1	5	'Phone
Des Moines, Ia.	15	38	8	R. R. or trolley.	1	6	'Phone
Dubuque, Ia.	3	58	7	R. R.	2	4	Telegraph or 'Phone
Sioux City, Ia.	25	98	8	R. R.	2	8	Telegraph or 'Phone
Topeka, Kan.	10	68	10	R. R.	2	..	Telegraph
Covington, Ky.	3	3	3	Horse	2	6	'Phone
Lexington, Ky.	12	36	11	R. R.	..	..	..
Bangor, Me.	..	..	6	R. R.	2	12	Telegraph or 'Phone

CO-OPERATIVE FIRE FIGHTING—Continued

NAME OF TOWN	PLACES LIKELY TO CALL ON DEPARTMENT FOR HELP			How Would Apparatus or Firemen be Transported?	HOW MANY MEN AND PIECES OF APPARATUS WOULD IT BE POSSIBLE TO SEND, AS A RULE?		How Could Absent Firemen be Communicated With?
	Min'm Distance	Max'm Distance	Number		Pieces of Apparatus	No. of Men	
Portland, Me.	10	90	10	R. R.	4	30	Telegraph or 'Phone
Brockton, Mass.	3	20	8	Horse or R. R.	2	11	'Phone
Chelsea, Mass.	$\frac{1}{2}$	7	7	Horse	2	34	Man stationed at tel.
Gloucester, Mass.	4	16	5	Horse or R. R.	2	25	'Phone
Haverhill, Mass.	3	18	8	R. R. or horse	2	12	Telegraph or 'Phone
Holyoke, Mass.	3	10	5	R. R. or horse	4	15	'Phone
Lynn, Mass.	6	10	8	Horse	2	24	'Phone
Malden, Mass.	2	5	11	Horse	2	8	'Phone
New Bedford, Mass.	1	22	9	Auto and trolley	3	..	Telegraph or 'Phone
Newton, Mass.	$\frac{1}{2}$	4	6	Horse	4	30	Telegraph
Salem, Mass.	..	..	11	Horse or R. R.	1	8	Telegraph or 'Phone
Somerville, Mass.	1	4	7	Horse	2	15	Messenger
Springfield, Mass.	2	26	10	R. R. or trolley	2	10	Telegraph or 'Phone
Taunton, Mass.	3	28	10	Horse or R. R.	2	12	'Phone
Waltham, Mass.	3	20	13	Horse or R. R.	2	15	'Phone
Worcester, Mass.	5	44	14	Horse or R. R.	2	12	Special arrangement by Tel. or 'Phone
Bay City, Mich.	3	120	7	R. R.	4	24	Men report hourly
Grand Rapids, Mich.	10	48	10	R. R.	2	20	Telegraph or 'Phone
Jackson, Mich.	10	45	8	R. R.	2	..	Telegraph
Muskegon, Mich.	3	40	9	Horse or R. R.	1	6	Special arrangement
Duluth, Minn.	1	100	..	Horse or R. R.	2	16	Telegraph or 'Phone
St. Joseph, Mo.	5	72	18	R. R.	..	..	..
Lincoln, Neb.	20	50	4	R. R.	2	9	Telegraph or 'Phone
Omaha, Neb.	6	100	5	R. R.	3	4	Telegraph or 'Phone
S. Omaha, Neb.	4	4	1	Horse	1	5	Telegraph
Concord, N. H.	7	70	12	Horse or R. R.	2	16	Telegraph or 'Phone
Manchester, N. H.	4	18	11	Horse or R. R.	3	25	Telegraph or 'Phone
Nashua, N. H.	10	40	6	R. R.	1	14	'Phone
Atlantic City, N. J.	3	30	5	R. R.	..	..	Telegraph or 'Phone
Orange, N. J.	1	..	5	Horse	3	24	Telegraph or 'Phone
Passaic, N. J.	1	5	9	Horse	3	30	Whistle
Paterson, N. J.	3	7	4	Horse	4	32	Man at telephone
West Hoboken, N. J.	1	3	3	Horse	3	24	'Phone
Amsterdam, N. Y.	10	16	2	Trolley	1	10	'Phone
Auburn, N. Y.	9	26	7	R. R.	2	10	Telegraph or 'Phone
Cohoes, N. Y.	1	3	4	Horse	2	10	'Phone
Elmira, N. Y.	6	60	13	R. R.	2	6	Telegraph or 'Phone
Jamestown, N. Y.	..	..	4	Horse and trolley	..	..	'Phone
Newburgh, N. Y.	..	..	3	Horse and R. R.	3	20	'Phone
Oswego, N. Y.	4	43	8	R. R.	2	10	Telegraph or 'Phone
Poughkeepsie, N. Y.	2	25	2	R. R. or trolley	1	10	'Phone
Schenectady, N. Y.	1	16	4	Trolley	..	..	..
Syracuse, N. Y.	26	80	4	R. R.	4	20	Telegraph or 'Phone
Troy, N. Y.	3	6	3	Horse or R. R.	2	10	Telegraph or 'Phone
Utica, N. Y.	4	53	11	Horse or R. R.	2	10	Telegraph or 'Phone
Yonkers, N. Y.	3	4	4	Horse	..	..	Telegraph or 'Phone
Akron, O.	4	35	4	R. R.	2	10	Telegraph or 'Phone
Columbus, O.	14	148	12	R. R.	6	..	Telegraph or 'Phone
Dayton, O.	7	30	16	R. R. or trolley	2	10	Telegraph or 'Phone
Lima, O.	..	..	17	R. R. or trolley	2	12	Telegraph or 'Phone
Hamilton, O.	8	15	3	R. R.	1	5	'Phone
Toledo, O.	7	184	55	R. R.	3	8	'Phone
Youngstown, O.	3	50	15	R. R. or trolley	2	20	Telegraph or 'Phone
Allentown, Pa.	3	16	10	R. R.	2	Any No.	Telegraph or 'Phone
Altoona, Pa.	18	38	4	R. R.	1	9	Telegraph or 'Phone
Erie, Pa.	16	37	4	R. R.	1	10	'Phone
Johnstown, Pa.	2	37	9	R. R.	2	12	Special arrangement Tel. or 'Phone
New Castle, Pa.	20	20	2	R. R.	1	8	Telegraph or 'Phone
Norristown, Pa.	1	7	3	Horse	2	..	Telegraph or 'Phone
Reading, Pa.	..	..	..	R. R.	4	20	Telegraph or 'Phone
Scranton, Pa.	19	43	45	Horse, R. R. and trolley	..	..	Telegraph or 'Phone
Williamsport, Pa.	12	30	7	..	2	..	'Phone
Charleston, S. C.	90	130	5	R. R.	2	10	Telegraph or 'Phone
Columbia, S. C.	48	130	4	R. R.	2	8	Telegraph or 'Phone
Chattanooga, Tenn.	28	110	5	R. R.	1	10	Telegraph or 'Phone
Knoxville, Tenn.	45	130	6	R. R.	1	4	Telegraph
Nashville, Tenn.	18	70	9	R. R.	2	8	Through R.R. auths.
Fort Worth, Tex.	30	65	4	R. R.	1	10	Telegraph or 'Phone
Galveston, Tex.	50	50	1	R. R.	2	8	'Phone
Waco, Tex.	30	31	3	R. R.	1	6	'Phone
Salt Lake, Utah	37	44	2	R. R.	1	8	Telegraph or 'Phone
Norfolk, Va.	1	22	3	R. R. and ferry	2	10	'Phone
Petersburg, Va.	22	22	1	R. R.	2	12	'Phone
Seattle, Wash.	..	400	..	R. R. and trolley	3	..	Special arrangement
Wheeling, W. Va.	2	31	9	R. R. or horse	2	10	'Phone
La Crosse, Wis.	16	60	4	R. R.	2	6	Telegraph or 'Phone
Racine, Wis.	10	60	4	R. R.	2	10	Telegraph or 'Phone
Sheboygan, Wis.	25	60	6	..	2	6	..
Superior, Wis.	3	70	8	Horse or rail	1	3	Telegraph or 'Phone

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It is also desired that the facilities furnished by the reference library in this office should be widely known and freely used by those interested in municipal affairs. Visitors will be welcomed and provided with conveniences for search, and inquiries by mail will be promptly dealt with.

FEBRUARY 17, 1909.

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Special Paving Number

THE MUNICIPAL JOURNAL AND ENGINEER, in the first issue in March of 1907 and of 1908, devoted a large part of its space to presenting information on paving matters. The same policy will be followed this year, and the March 3 issue will be a special paving number. Data concerning pavements in hundreds of cities will be presented, collected directly from officials and strictly up to date. Methods and appliances for repairing streets, including municipal asphalt plants, both stationary and portable, will be described. Also street sprinkling and cleaning will be dealt with, and street flushing by machine and by hose. Bituminous treatment of streets for

laying dust and for more permanent improvement will be treated at some length. In short, all problems of construction and maintenance will be dealt with at greater or less length.

Civil Engineers as Inspectors

THE importance of the inspector on engineering work is too often not realized, even by the inspector himself. This is especially true when, as in the case of sewer work, the construction is almost instantly covered and is thereafter practically inaccessible for inspection. The difficulty in selecting proper men for such positions is great; for a good inspector must be of reliable honesty, firm, but politic and slow to quarrel, faithful, and with considerable practical information concerning the class of work of which he has oversight. There is apt to be a sort of class loyalty and fellowship between one man of a craft and his fellow craftsmen which tend to make a mason too "easy" as a masonry inspector, for example. The very poorest inspector obtainable, and yet perhaps the most common, is the political hanger-on who knows no trade, whose only loyalty is to the party boss, who probably has his price—and a low one at that—and who feels himself to be independent of the engineer in charge and is heedless of his instructions.

San Francisco is employing young civil engineers as inspectors on its sewer construction, and there is reason for confidence that the move will prove beneficial. Such men, if they have had a little experience in practical work, should know good work from bad, they can understand specifications and are quick to learn; there would be no trade fellowship with any of the workmen, and if they are true engineers their steadfast honesty is part of their professional pride. In addition, the city will be helping the coming engineers to acquire a practical knowledge which will redound to its own advantage later on. The writer considers that the information he obtained as an inspector in his early engineering days was perhaps the most valuable which he has been able to acquire. We hope the plan will be made permanent; or will at least be given a fair trial.

Water Waste and Meters in Boston

CITIZENS' associations and newspapers of Boston are urging the general adoption of water meters in that city for reducing the waste which is estimated to be costing \$600,000 to \$700,000 a year; and which they assert is hastening with alarming rapidity the day when a supplementary source of supply must be adopted. The Water Board estimates that the cost of installing meters in Boston would be between one and one-half and two million dollars; by which expenditure the larger amount of say thirty million dollars for an additional supply would be postponed for a considerable time to come. As an illustration of what metering has done for the other towns of the Metropolitan District, the consumption in Melrose fell from 118 gallons in 1907 to 60 gallons in December, 1908. Of the eighteen cities and towns of the District, six have already been wholly or largely metered, and the consumption in these

last December averaged 33, 41, 52, 56, 58 and 60 gallons per capita per day respectively, while the average for Boston was 155, and that for the entire district was 127. While a considerable percentage of Boston's loss is from mains and service pipes, the Water Department states that a still larger amount is lost through leaky fixtures of various kinds.

HOLYOKE'S MUNICIPAL LIGHTING PLANT

THE report of the Gas and Electric Department of the city of Holyoke, Mass., for the year ending Dec. 1, 1908, has been made public and shows that, in spite of dull times, the output of the gas works was 11.2 per cent greater than in 1907, and that of the electric station 9.9 per cent greater. The income from the latter, however, was materially less than for 1907 because of the considerable reduction made in the price of current, which resulted in a diminution by \$34,000 of the amount which would otherwise have been received. The repair account of the gas works was unusually large because of the necessity for replacing the lower courses of sheets of one of the gas holders by new ones; and the addition of a turbine engine and blower for the water gas sets. These brought the cost of repairs up to \$17,125.

Extensive additions and alterations were made to the electric plant, for which \$160,000 was appropriated by the city; there having been added to the equipment one 2,500-kw. turbo-generator, four 400-hp. B. & W. boilers with Murphy stokers, and other appliances. The number of consumers of current increased 40 per cent during the year.

In the gas plant about 182 million cubic feet of gas were distributed, in the manufacture of which 10,958 tons of coal were carbonized at 221,484 gallons of gas oil used. The coke produced amounted to 394,478 bushels, of which 204,066 were used in the retort house, 56,305 in the water gas generators and 89,825 sold. Tar was made to the extent of 136,963 gallons, all of which was sold together with some of that left over from the previous year. About 60 per cent of the meters used were prepayment meters, the number of regular meters in use being less than in 1907, although the total number was considerably increased.

At this plant were employed, besides the superintendent, five inspectors and clerks, thirty-eight foremen and others at the works, and four for outside service.

From the electric station were sent out about five million kilowatts to 1,217 consumers using 1,402 meters. This current was used in 518 street arc lamps, 457 commercial arc lamps and 44 street incandescent lamps. In generating the current 4,991 tons of steam coal were used. The employees included, besides the superintendent, one clerk, one foreman, fifteen men at the plant and twenty trimmers and other outside men.

Gas was sold at \$1 per thousand feet, net. The income from this and from the coke and tar was \$177,285.15. The expenses were \$127,194.54. Interest was allowed at about 3 per cent on the total cost of the plant; depreciation at about $3\frac{1}{2}$ per cent. Adding

these and something over \$1,000 in bad debts brings the total to \$158,422.71; showing a profit of a little under \$19,000, or a little over 3 per cent on the total cost of the plant.

The price of electricity was 6 cents per kw-hr. The expenses of the electric plant were \$99,656, and interest and depreciation at about 3 and $3\frac{1}{2}$ per cent, respectively, together with bad debts, brought the total up to \$134,226.30. The income from sale of current was \$146,329.43; showing a profit of about \$12,000, or something less than 2 per cent on the total cost of the plant, which was \$708,912.74.

Of the total cost of the two plants, \$1,300,822.59, it is estimated that the depreciation has amounted to \$29,275.23.

FROZEN FIRE HYDRANTS

THIS is no new subject to water works men nor to our columns; but its importance warrants frequent reference to it, and we are reminded of it by the latest report of the National Board of Fire Underwriters concerning the city of Des Moines, Ia., issued in January of this year. In that city all hydrants are provided with automatic drip valves and drain into pockets of broken brick, this drainage being generally good. In spite of this 12 hydrants were found frozen during the past winter. This was apparently not the fault of the Fire Department nor of the Water Department. It is stated that all hydrants are inspected in the fall, when threads are greased, stems oiled, necessary repairs made, and, except in the business districts, they are flushed. One man devotes his entire time to hydrant flushing and flushing dead ends. During the winter two to four men are detailed on this work; hydrants in the business districts are inspected daily and all others at least twice a week. Those used at fires are inspected and pumped out within 12 hours. A portable boiler is used for thawing out those frozen. The freezing of these hydrants was attributed to their use by the Street Department in flushing crossings during severe weather. Aside from the questionable advisability of flushing crossings in weather when water freezes and would, it would seem, make them slippery, there is the old question—or rather certainty—that neither the Street Department nor any other department except those of Fire and Water should be allowed to use or in any way manipulate any fire hydrants. The precautions taken to insure against freezing as described above seem to be excellent and are recommended to other cities where not so much care is taken.

News of an incident which emphasizes this reaches us as we write, in shape of a news item from Middle Village, L. I., where a fire was allowed to burn itself out because the firemen found all fire hydrants within reaching distance to be frozen or out of commission. The same sort of incidents are happening somewhere every winter; and the heedlessness which permits such a condition might, from the serious consequences involved, almost be classed under the head of criminal carelessness.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

To Require Repair of Park Spaces

Boston, Mass.—A bill before the Legislative Committee on Railways on the petition of Mayor George A. Hibbard, of Boston, asks for legislation to provide for the maintenance and repair by street railway companies of reserved or park spaces in highways in which they operate. The city of Boston wants authority to order the Boston Elevated Company to maintain the reserves when they are worn, the grass spoiled and the dust flying, because of the street car traffic. It is a general bill, however, applicable to all the railway companies in the State and to all the park locations which they use. Explaining it in behalf of Boston, Assistant Corporation Counsel Spring said that there are 12 miles of boulevard in the city with reserve spaces for the railway company to operate in. In some of these the traffic is so heavy where the cars stop to take on and to discharge passengers that the sod is worn off, and the city authorities regard it as the duty of the company to restore and maintain them since the reserves are raised above the street level and curbed so that they can be used only by the electric cars, except at crossings.

Make Street Crossings of Cement

Cleburne, Tex.—For the first time in the history of the city substantial cement crossings are being constructed on all intersections of the business streets. More than a dozen such crossings have either been constructed during the past week or are now under contract, with committees busy closing up contracts with the adjoining property owners and business men for at least 20 other crossings.

Extensive River Boulevard System Suggested

Fort Wayne, Ind.—At a meeting of the Commercial Club Secretary R. B. Hanna delivered an address on a project for the general improvement of Fort Wayne. He advocated the acquisition by the city of portions of the banks of the Maumee, St. Mary's and St. Joseph rivers and the building of a system of boulevards.

Time Limit for Street Work

Haverhill, Mass.—A plan that the late Ex-Mayor Burnham found profitable is to be carried out by the Municipal Council, as an order has been introduced by Alderman Desmond, head of the Department of Streets, requesting all citizens who intend to petition for permanent improvements in or about their property to have their petitions in on or before May 1. In this way the Council plans on laying out the work to be done during the year and to prevent petitions coming in when the snow flies in the early winter for curbs, cobble gutters, concrete or granolithic walks and for sewer service. It will also serve to prevent the digging up of macadam roads after they are built for the installation of sewer mains, as has heretofore been a disastrous custom.

Specifications Issued for Market Street, Philadelphia

Philadelphia, Pa.—Specifications for the paving of Market street from Delaware avenue to the Schuylkill River, on which bids were invited February 15, contained unusual features. Bids were asked on three kinds of paving—stone, asphalt and wood. The pavement is to be laid on a six-inch concrete base, machine mixed, and optional bids will be received for reinforcement with bars or rods. If creosoted wooden blocks are used they will be four inches deep and the joints will be grouted with Portland cement. On one section of the street where there is very heavy hauling stone will be laid.

Council Puts Official in Complete Charge of Street Work

Portland, Ore.—Hereafter no proceedings for the improvement of streets shall be started by the City Council either by petition or resolution until such petition or resolution is approved by the City Engineer, and no proceedings for improvements will be discontinued except on the approval of the Councilman in whose ward the improvement is to be made, according to a resolution adopted by the City Council, which was fathered by Councilman Rushlight.

No More Long Guarantee Contracts

Portland, Ore.—Mayor Harry Lane has vetoed two ordinances providing for paying to contractors who lay hard surface streets the sum of 2½ cents a square yard each year for 10 years for maintaining the pavements which they lay. The Mayor has become convinced that the maintenance proposition is useless and is becoming an unnecessary burden upon the taxpayers. He believes the city should do its own repair work on the streets and recommends that a plant be erected for this purpose. If this is done he is of the opinion that the cost of maintaining hard-surface streets would be reduced one-half.

SEWERAGE AND SANITATION

Bacteriologist Wanted by Georgia City

Augusta, Ga.—The Board of Health has passed a resolution endorsing the ordinance providing pay and fixing the duties of a City Chemist and Bacteriologist. The ordinance was framed last fall and had been before the Board of Health until its last meeting, when favorable action was taken. Under the provisions of the ordinance the City Chemist and Bacteriologist shall receive a salary of \$125 per month, and shall be chosen by the City Council on the recommendation of the Board of Health.

Charleston Will Now Complete Sewerage System

Charleston, S. C.—Now that the city has for the first time in its history an adequate supply of drinking water, it is proposed to complete the sewerage system.

Many Bakeries Closed in Chicago

Chicago, Ill.—A fight between the Chicago Health Department and hundreds of bakeries in the city which do not comply with the bakeshop ordinance of November 11, 1907, has been started by Charles B. Ball, Chief Sanitary Inspector. Notices that they must close their bakeries or remove them from basements were sent to some of the largest hotels and restaurants in the downtown district and to bakeries in all parts of the city. Out of 480 bakeries which are listed by the Health Department, 300 already have received or will receive the notices. Half the bakeries in the city are expected by city officials to retire from business if the ordinance is rigidly enforced. Health Department officials say enforcement of the ordinance requiring clean bakeries will have as far-reaching effects as the one requiring pasteurization of milk, and that even a more bitter fight will be necessary on the part of the city in order to secure its enforcement. Every person in Chicago, from the busy patron of the downtown hotel or café to the modest householder, who purchases an occasional cake from the neighborhood bakery, will be affected by enforcement of the ordinance. The bakery men say that the first effect to be noticed by the public will be an increase in food prices similar to the increase in milk prices which has accompanied the Health Department's enforcement of its clean-milk ordinance.

Milk Doctored in Maine

Augusta, Me.—According to statements made before the Agricultural Committee of the Legislature by P. F. Skofield, Assistant State Dairy Inspector, doctored milk is being sold in all the larger cities of Maine with a single exception. The name of the city in question was withheld. Much of the milk, he said, has been found to be filled with formaldehyde, analin, orange and other coal tar dyes. Director Charles D. Woods, of the Agricultural Experiment Station at Orono, said that it was almost certain to cause death if taken by poorly nurtured children. In addition to these preservatives, a large percentage of the milk sold in the cities was found to be diluted with water to such an extent as to be almost worthless as food. The present conditions, it was asserted, are due largely to the fact that the question of milk inspection is in the hands of the local authorities. The bill provides for a State Inspector of Milk, whose duty it would be to safeguard the public health by vigorous prosecution in all such cases.

Anti-Tuberculosis Campaign in Cohoes

Cohoes, N. Y.—Mayor M. D. Hanson has written a letter to the public regarding the anti-tuberculosis campaign of the State Charities Aid Association. He announces a series of lectures to be given to pupils of the High School, teachers of the public school, members of fraternal orders, workmen and business men. He advises all citizens to visit the armory, where the exhibit and lectures are held. He says he will suggest to the Board of Health the advisability of visiting all factories and seeing that rules of cleanliness and ventilation are observed. An ordinance prohibiting expectorating on sidewalks will be prepared. Cohoes has had a high death rate from tuberculosis in times past.

Morristown to Have Disposal Plant

Morristown, N. J.—The announcement that the Court of Errors and Appeals has sustained the Supreme Court decision allowing Morristown to build its sewage disposal plant in Hanover Township, delights the great majority of the people of this town. The sewer system, which should have been in operation months ago, has been held up by a few wealthy people who objected to the location of the disposal plant. The Board of Sewerage will order Contractor Costa to proceed with the erection of the disposal plant. With no more hindrances, the sewer system should be in operation by September or October. All the pipes are laid in the streets, and there remains only the laying of the laterals and the erection of the disposal works.

Milk Ordinance Goes Into Effect

Madison, Wis.—The milk ordinance passed last June went into effect February 1. The ordinance requires that the tuberculin test be applied to cattle belonging to every herd owner shipping milk to the city. Practically every herd has already been tested.

Will Screen Bakeries to Keep Out Flies

New Orleans, La.—At a meeting of the Health Board members of the Master Bakers' Association appeared to protest against one provision of the pending ordinance governing the sanitary regulation of bakeries. It was agreed that the screening of the establishments would prevent the thorough ventilation so necessary in baking breadstuffs and would be a poor preventive against flies. They said that in summer flies kept away from bakeries on account of the heat. Dr. O'Reilly insisted that the only sure way to keep flies out was to screen them out, and, accordingly, the clause was kept in the draft of the ordinance.

New Orleans Adopts Tuberculin Test

New Orleans, La.—Council has passed the ordinance prepared by the Board of Health requiring that the tuberculin test be applied to cattle belonging to dairy farms supplying milk to the city.

State Aid for Sewage Disposal

Harrisburg, Pa.—The bill prepared by the League of Third Class Cities of Pennsylvania providing financial aid from the State in the construction of sewage disposal plants has been introduced in the Legislature. The aid will amount to 50 per cent of the cost of construction of the original plants or additions. The bill will also provide for the payment to cities having already erected such plants of an amount equal to 50 per cent of the present value. Should this become a law, the city of Reading will be reimbursed to the extent of between \$250,000 and \$300,000.

Sewer Connections Cheaper to Suburban Householders

Meadville, Pa.—A request for sewer connection from property owners on East Pine street, outside the city limits, developed the information in the Select Council that several hundred suburban families have both sewer and water connections, and are enjoying those privileges at less cost than is borne by residents within the city limits, the difference being in the matter of taxation for the ownership of the systems. In other words, it was stated that while residents of the city have paid about \$70,000 on the water plant, suburban patrons, without helping to pay for the plant, get their service at the same rates as city taxpayers. A strong sentiment favors confining the service within the city limits.

New Mosquito Brigade of Police

New Orleans, La.—As a result of a conference between City Health Officer W. T. O'Reilly and Police Inspector W. J. O'Connor fifty patrolmen are being instructed at the offices of the City Board of Health as to their work for the "mosquito brigade" during the season, lasting from March 1 to December 31. It was decided that these patrolmen are to be used for the enforcement of general sanitary ordinances of the Board, and not particularly for merely examining cisterns, vaults, etc., on premises. Dr. O'Reilly is considering the advisability of ordering a strict enforcement of the anti-spitting ordinance during the present year. The Health Board in the past has found it difficult to put this ordinance into effect, owing to the fact that it has had no regular policemen who were able to make arrests whenever a person is caught expectorating in a street car, on a sidewalk or in a public building. Now, however, there will be patrolmen as inspectors, and it will be possible to punish this class of offenders. There are a number of other ordinances that the police will attend to, and Dr. O'Reilly believes that under the new conditions it will be possible to wage an energetic sanitary campaign during the coming summer.

Filtered Water Decreases Typhoid

Pittsburg, Pa.—The report of Dr. J. F. Edwards, Superintendent of the Health Bureau, shows that typhoid fever has decreased astonishingly in the central part of Pittsburg, but on the North Side, where crude river water is still drunk, there exists typhoid fever in almost epidemic degree. In January, 1908, there were 341 cases reported to the Health Bureau from the central part of Pittsburg, while last month there were only 27 cases. In January of last year the South Side produced 26 cases, while the number for last month was 11. In January, 1908, 51 cases developed on the North Side, while there were 35 last month, or eight more cases than in the central part of old Pittsburg.

Engineer Inspectors Employed on Sewer Work

San Francisco, Cal.—The more critical inspection of sewer work demanded by the Civic League has caused the Engineering Department of the Board of Public Works to introduce a new system for the conduct of the work. Assistant Chief Engineer Cormick, in charge of sewers, has dismissed or transferred most of the old inspectors and is employing young civil engineers in their stead. The old inspectors received \$125 a month, the new men from \$100 to \$150.

WATER SUPPLY

Fight Order for Meters on Fire Pumps

Brooklyn, N. Y.—Manufacturers are prepared to fight an order issued by the Water Department requiring the installation of meters on fire pumps in all factories. If the Water Department order is carried out business men declare risk from fire will be increased in all their factories, and as a result insurance rates will be increased. By a court decision the city is upheld and the officials have demanded that the meters be installed within 15 days. An appeal for extension of time has been made and the association is prepared to contest the case in the courts. In their protest the manufacturers state that the new meters will not prevent the stealing of water, as held by the Department. They declare that through long disuse the meters become clogged and render a fire apparatus entirely useless. The cost of water used for fires is so insignificant that they would rather pay any price than run the risk of having the supply cut off in a critical moment by a defective meter. Fires are so infrequent that the meters might not be used in several years, and it would require constant attention to keep them in order for an emergency. Fred Lavenburg has filed a protest with the Water Department, with the approval of the Manufacturers' Association. Referring to an experience he had with a meter, he states that there was a fire in his factory last August and that the lower part of the building was destroyed before water could be turned on. The standpipes on the building were almost useless owing to the fact that an eel got into the tap of the meter. It was necessary to cut the meter out to get rid of the eel and start the water running.

Corning Water Works Has Good Year

Corning, N. Y.—The annual report of the Board of Water Commissioners shows a profit for the year of \$17,814.24 in the conduct of the municipal water plant, an excellent showing. The members of the Board serve without pay. The Board gives much valuable time to the water works plant and has accomplished a vast amount of work in rebuilding a dilapidated system into one of the best municipal organizations in the State.

Eau Claire Wins in Water Fight

Eau Claire, Wis.—After a hard-fought legal battle the city has won a decision in the State Supreme Court in its fight to secure control and ownership of the water works plant in this city. The court finds that the award of the arbitrators is valid and binding upon the parties; that the city did not exceed its constitutional limit of indebtedness in making purchase of the water works, and that plaintiff is entitled to the judgment prayed for. The principal cause of the suit was the objection of the water company to the value set on its property by the Board of Arbitration—\$253,000. This was declared to be entirely too small. The decision of the Supreme Court, however, discountenances this objection. The city has raised \$153,000 by taxation and \$100,000 by bonds to pay for the water works plant. Before the money was raised the banks stood loyally by the city, and for a time put up a large sum of money.

Use of Filtered Water Extended

Pittsburg, Pa.—Filtered water was turned into the old Monongahela Water Company's system of pipes, on the South Side, February 4.

Water to Fight Fire Only

Washington, D. C.—The District Commissioners have notified Chairman Smith, of the District Committee of the House of Representatives, that they favor the passage of a bill allowing the town of Chevy Chase, Md., to connect its water system with that of the District, only if the bill is amended to allow the use of the District's water solely for extinguishing fires. The Commissioners object to the use of the District's water in certain "cases of emergency and necessity," as provided in the bill.

New Water Supply Turned Into Mains

Lockport, N. Y.—Lockport got the first of new Niagara River water February 3. Lockport has waited for years for this supply of potable water to replace that taken from the Erie Canal. For the last two months the people have been particularly anxious, for the new supply was promised for January 1. Leaks in the pipe line and other accidents caused the delay. Everything is now running smoothly. The new water supply system has been under construction for two years, and cost the city \$700,000. It brings the water from a point in the Niagara River 2,600 feet from the shore line at North Tonawanda, a distance of 14 miles, to a standpipe in Lockport, from which it is distributed by gravity. At present one of the three 5,000,000-gallon electrical pumps at North Tonawanda is in operation, and is taking full care of the city's wants.

Town Has Good and Economical Water Works

Martins Ferry, O.—The new system of pumping water from the 24 big wells near the water works station on the river shore has been in successful operation about a month now and the residents of the city, with the people of Bridgeport and Brookside, who are also supplied, are more than pleased. It was feared at first that the plan was not going to work out, but the defects discovered after the first trials have been remedied and with the perforations at the bottom of the pipes cleared once and for all time of the sand, the wells in the future will, it is expected, furnish all the water required. The cost of the wells was only \$8,000, although \$15,000 had been estimated for the purpose. As a result of the successful operation of the new system at Martins Ferry a dozen or more towns are planning to do likewise. Many letters of inquiry have been received and delegations of water works officials are arranging to inspect the wells.

City Gets Staten Island Water Plant

New York, N. Y.—Municipal ownership of water supply on Staten Island became a reality last week, when the city took over the plants and sources of supply of the Staten Island Water Supply Company, located on the north shore of Staten Island. The price to be paid is \$1,100,000. The contract for the purchase of the company was effected on April 2, 1908, and signed by Deputy Commissioner Bowe October 8, 1908. It was expected that the city would take over the Crystal Water Company, on the east shore, at the same time, but despite the fact that the contract for the purchase of this company was signed in 1906 it will be impossible to take it over for some time, as the company is unprepared. Taking over by the city of these companies will doubtless mean an improved service and a reduced water rate throughout the island.

Will Force Company to Furnish Water

Princeton, Ind.—The foundation for an interesting test case was laid at a recent meeting of the City Council, when, on petition of the Perpetual Building and Loan Association of this city, the City Attorney was instructed to bring mandamus proceedings against the Princeton Water Company to compel it to abide by its franchise and furnish water impartially to all who pay for it. The suit will be brought at once. Recently the building and loan company acquired from one of its patrons a residence on which payments were delinquent, making a small payment to the man who relinquished the house. Before the former owner moved out, however, the water company had turned off his water because he was behind in his water rental. Later a tenant moved into the property, and as the water had been cut off, he appealed to the building and loan company, and they went to the water company and told them to turn on the water, tendering the payment in advance. The water company flatly refused to allow any water turned on there until the building and loan people should pay the amount the previous owner of the property was delinquent for water, holding that the amount due stood as a form of lien against the property.

STREET LIGHTING AND ELECTRIC POWER

Gas Company Complains of Meter Readings

Dayton, O.—The artificial gas company has just discovered that the city has been getting exceptionally low rates on gas used in the city building for the past year. Although the city paid more than \$50 per month for the lighting of the city building and the market house during 1907, the total amount paid for gas for the building during the past year was but about \$52, an average of about \$4.25 per month. The gas company's officials have arrived at the conclusion that something is wrong with the meters and has requested the Board of Public Service to make up for this loss. The Board declined to pay any extra amount, or even a compromise sum to the company, stating that the accounts for the past year have been closed. As a result, the company may take the matter to Council, and a change of meters will probably be made at the city building at once, so the correct amount of gas used will be tabulated.

Plans for Light Plant Have a Far-Away Look

Evansville, Ind.—If Evansville has a municipal lighting plant under the plans outlined by the present city administration it is likely that it will be established under a private franchise, which will empower the city to become the possessor of the plant eventually. It developed recently that members of the city administration who are advocating a municipal plant are practically satisfied that the funds of the city now available, or to become available within the next year, will not be sufficient to establish a lighting plant without indebtedness. Because of the heavy municipal charges that are now overhanging the city because of the water plant, and because of the bonded debt, which exceeds the legal limit, the only alternative now is for an arrangement whereby the city can take over a private plant.

No Fees for Permits of City Electrician

Knoxville, Tenn.—The city does not derive one cent from the permits issued by the City Electrician, but he must devote most of his time inspecting electric wiring for the public. During the past year he issued more than 600 permits, and work under every permit had to be inspected two or more times. Herman Schenck, City Electrician, also has charge of the fire alarm system, but the most of his time is devoted to inspection of routine work. It is probable that this year the ordinance governing the electric wiring will be amended so as to charge fees for permits, as is charged for building and plumbing permits issued.

Wind Puts Lighting Plant Out of Business

Muskogee, Okla.—Not a factory was operating in Muskogee February 5, as a result of a small tornado which swept through the city at 2 o'clock in the morning, demolishing part of the electric light and power plant, leaving the city in darkness and without power.

Would Regulate Price of Electric Current in New York

New York, N. Y.—A bill is pending before the Legislature fixing the price of electric current at 5 cents per kilowatt hour in the entire City of New York.

Better Electrical Work

Philadelphia, Pa.—By licensing electrical engineers and contractors, as provided in the proposed bill now before the Legislature reorganizing the Electrical Bureau, Chief McLaughlin expects not only to further safeguard property from fire, but to bring \$75,000 to \$100,000 into the City Treasury. This revenue, he says, will be sufficient to pay for the increased force of inspectors required by the additional inspection to be made, and so increase the revenues for the Bureau as to make it self-sustaining. Contractors will pay a license fee to do business of \$100 for the first year and \$25 for each year thereafter. He must file a bond of \$2,000. In other cities the bond required is \$5,000. The plan works satisfactorily in Washington, Baltimore, New Orleans and other cities. Engineers pay a license of \$10, which must be renewed yearly.

FIRE AND POLICE

No Extra Time for Firemen's Meals

Boston, Mass.—Mayor George A. Hibbard has vetoed the order recently passed by both branches of the city government providing for daily additional time for meals for members of the Fire Department. The Mayor reached his decision after a conference with Fire Commissioner Parker. The Commissioner assured the Mayor that the efficiency of the Department would be greatly impaired by allowing the men the additional time for their meals unless numerous additions were made to the force.

City Will Charge Suburbs for Fire Service

Cleveland, O.—A resolution declaring that in the future fire protection will only be furnished adjoining municipalities in cases of great emergency, and that for each alarm of fire responded to for property outside the city limits a charge of \$325 will be made, has been adopted by the Board of Public Safety. "East Cleveland, Lakewood and other adjoining villages should become a part of Cleveland if they want our fire and police protection," said Director Excell.

City Must Pay Police Chief

Dunkirk, N. Y.—The Common Council has been mandamus by the Police Commissioners to compel them to reimburse Police Chief Parsons for the \$242.96 which he paid to Seymour H. Marshall and William A. Carlin, former Civic League agents, in their work securing evidence of excise violations by Dunkirk saloon-keepers. Justice Wheeler handed down a decision directing the reimbursement. Paul Weiss and Martin L. Murray, two members of the Council, were convicted of excise law violations.

Police Department Nearly Self-Sustaining

Hattiesburg, Miss.—The city Police Department lacked only \$35 of being self-sustaining during the month of January. This is according to the report of City Marshal Williams. The total fines charged during the month were \$850. Of this amount \$450 is represented by appeals taken to the higher court; \$314.85 collected and turned over to the City Treasurer; \$15.15 worked out, and \$70 due by prisoners in custody.

Recommendations of Lynn Fire Chief

Lynn, Mass.—In his annual report Fire Chief T. A. Harris recommends that a reservoir be built at a higher elevation so as to increase the pressure in the water mains. The increase in pressure should be sufficient to result in less use of steam fire engines except in the business district. He also wants a drill tower, where firemen may practice climbing ladders, raising hose, etc. The fire limits should be extended and shingle roofs prohibited for some distance beyond the limits. In the line of apparatus an auto-chemical and a water tower are wanted.

Shortage of Water Makes Big Fire Loss

Norwich, Conn.—Fire, causing a total loss of \$365,000, destroyed a number of buildings in the business district February 9. Although the whole fire fighting force was called to the scene, the firemen were unable to check the spread of the flames, owing to the scarcity of water, the supply in the reservoir being low.

Paris Will Use Motor Apparatus Exclusively

Paris, France.—All horses have to be dismissed from the city of Paris Fire Brigade and their places taken by gasoline motors. The order has been given by the Municipal Council after two years' close experimenting with mechanically-driven engines and fire tenders, and would be put into force immediately were it not for the heavy cost. There are at present 76 horse-drawn fire engines in the city of Paris, costing annually a sum of \$64,000; if they could all be immediately transformed into gasoline engines the annual upkeep cost to the city would not exceed \$17,400. The change will require six years and will cost about \$320,000.

GOVERNMENT AND FINANCE**Boston's Mayor Insists on Attorneys**

Boston, Mass.—When Mayor George A. Hibbard was formally notified that the Common Council had overridden his veto on the order preventing him from retaining counsel at the city's expense to represent him at the State House when his bills and the measure for charter revision come up for public hearing he only smiled and said that he would be represented by counsel anyway. Then he announced that, if the Aldermen concur with the Council in overriding the veto, he will appoint three attorneys as assistants to the Corporation Counsel in the city's Law Department, and they will serve as his representatives. Former Governor John L. Bates, Attorney Michael J. Sughrue and former Assistant United States District Attorney Guy A. Ham have already been engaged by the Mayor to appear before the Legislative committees. While the Mayor has not decided upon what retainers Governor Bates and Mr. Ham will receive, Michael J. Sughrue, former counsel for the Finance Committee, will be paid at the rate of \$5,000 a year.

Manila's System of Accounting Commended

Manila, P. I.—E. W. Sells, of New York, an expert accountant engaged by the insular government to examine its system of accounts and audits, has completed his work and departed for home by way of Europe. He pronounced the government's system of accounting better than that of any State or city he had ever investigated. Sells also declared that the system used by the insular government is the most economical. Some minor changes were recommended.

Vote Against New Charter

St. Albans, N. Y.—The city has voted against the new city charter proposition by a vote of 296 to 86 at a largely attended city meeting. The idea has not been popular with the masses at any time, and good students of affairs predicted the result accurately. Ward One, yes 23, no 29; Ward Two, yes 5, no 43; Ward Three, no 60; Ward Four, yes 32, no 46; Ward Five, yes 23, no 51; Ward Six, yes 3, no 67.

Independence Cuts Expenses

Independence, Kan.—The city reduced its expenses just \$99 a year when its City Council passed an ordinance fixing the salary of the City Attorney at \$1 a year. He has been receiving an annual salary of \$100. With his decrease in salary, the ordinance also takes away his duties, which are to be added to those of the City Counselor, whose salary is \$600 a year. The Council also refused to increase the salary of its members from \$2 to \$3 a meeting.

Lowell City Charter

Lowell, Mass.—The bill prepared by the Board of Trade to amend the city charter of Lowell has been presented to the Legislature. The bill provides for a Board of nine Aldermen, three to be elected each year. All candidates for municipal offices are to be nominated at a preliminary election, when their names are printed on an official ballot when requested by petition. No party designation will be printed on the official ballot either at the preliminary or final election. The two persons receiving the highest number of votes at the preliminary election are the candidates at the final election. The Mayor will appoint, without confirmation by the Board, a Superintendent of Streets, a Superintendent of Buildings, City Solicitor, Purchasing Agent, City Engineer and City Physician. The Mayor will appoint, subject to the confirmation of the Board, all city officers and boards now chosen by the City Court. The Board of Aldermen shall establish by ordinance the salary of every executive or administrative officer except the Mayor. The Mayor may remove all officers whom he has the power to appoint. The Mayor's salary will be \$5,000 a year.

REFUSE COLLECTION AND DISPOSAL**Would Have Municipal Garbage Collection**

Duluth, Minn.—The annual report of the Health Department states that the present system of collecting garbage is far from satisfactory, and should be more closely brought under the supervision of the Health Department. Dr. Patton recommends that the city purchase a team and wagon for collecting garbage. He says under a municipal system the cost of burning the garbage at the incinerator would be reduced almost one-half. At present the average cost of burning is 18 to 20 cents a cubic yard.

Would Put Street Cleaning Under City Engineer

Omaha, Neb.—According to the report of City Engineer Andrew Rosewater, the city would save about \$16,000 were the Street Cleaning Department placed under the direction of the Engineering Department. The Street Cleaning Department cost the city \$48,000 last year, \$32,000 for actual work and \$16,000 for the administrative end.

Garbage Plant Is One Year Old

Seattle, Wash.—Municipal Garbage Incinerator No. 1, situated on the south shore of Lake Union, has started on its second year of activity and City Engineer R. H. Thomson and Assistant City Engineer C. J. Moore, who is in charge of its operation, say that it is fulfilling all expectations and is running very nearly to its capacity of sixty-five tons of refuse each twenty-four hours. There was considerable difficulty in the beginning, but all of these have been overcome and the plant is working perfectly. Since February 17, 1908, when the walls were thoroughly dried, there have been 16,300 tons of garbage and refuse handled at the incinerator, an average of sixty-four tons. From fifteen to twenty loads of clinkers are sold daily to contractors for use in foundations and a large amount of this material, taken from the ovens, will be used in the asphalt plant, which is now completed. The incinerator and furnishings cost \$30,147.89. It costs about \$1,500 per month for operation, including salaries of \$1,200.

RAPID TRANSIT**Boston Would Have Public Service Commission**

Boston, Mass.—At a hearing given by the Legislative Committee on Metropolitan Affairs on the petition of C. Howard Walker for the establishment of a Metropolitan Public Service Commission, Sylvester Baxter, who appeared for the petition on behalf of the Metropolitan Improvement League, declared that present subways have been built without regard to the future, and that there is need to plan in an extensive manner for the transportation of the future. The bill accompanying the petition asks that the Boston Transit Commission be constituted a Public Service Commission for the Metropolitan District.

Will Lay T Rails Without Ties

Seattle, Wash.—The first street car line to be laid in Seattle without the use of wooden ties is now in course of construction on Pike street, between Belmont and Fourteenth avenues, by the Seattle Electric Company and the success of this method of construction will be watched with considerable interest. Instead of tearing up the full width of the right of way in order to lay wooden ties, channels are dug through the asphalt paving just wide enough to admit the T rail and its foundation, leaving the paving between the rails and between the two lines of track undisturbed. This kind of construction has been used in Philadelphia for four years and is reported to have proved satisfactory and more substantial than the old tie style, especially in a section of country where ties are not a drug on the market. The foundation for the rails is of concrete, deep enough to make a solid foundation, in which iron "chairs" are set five feet apart on a level with the concrete. To these "chairs" the rails are fastened and at regular intervals are held together with iron girders.

MISCELLANEOUS

Favor Drainage Canal

Atlantic City, N. J.—Members of City Council, in company with expert engineers, have decided that the proposed drainage canal outlined for the back of the city is a necessity, and stated their willingness to vote for carrying out of the project as soon as land can be secured. The canal, which will cost about \$350,000, will run from Gardner's Basin at the Inlet to connect with the Beach Thoroughfare. According to the plans, the canal will be 30 feet wide, with sides and bottom of concrete, and will be bordered with drives and walks. Officials believe it will be one of the greatest features of the resort, and expect to receive returns through the enhanced values from cottage sites near the improvement.

For a Park Along the Hudson

Albany, N. Y.—A fifteen-mile park lying half a mile wide on both sides of the Hudson River, between Peekskill and Newburgh, and preserving to the State forever the Palisades for that distance, is the object of a bill approved by a committee headed by Alton B. Parker and introduced in the Assembly. The project has the active indorsement of the committee on Hudson River scenery of the Hudson-Fulton celebration committee. Nearly every owner of the land has agreed to sell his holdings to the State at a nominal figure.

Correcting Errors in House Numbers

Louisville, Ky.—Charles C. Cullen, one of the assistants in the office of the City Engineer, is making many changes in the numbers recently placed by the contractor on houses. In some instances the numbers were wrongfully placed through the fault of the contractor, and in other cases the measurements reported by the inspectors who made the designations were wrong. The scheme of numbering contemplated that there should be a number for every twenty-five feet of space in a block, including the vacant lots if there were any. The inspectors in some instances stepped off the spaces instead of measuring them with a tape line, and they got the measurements wrong on many blocks, especially in the outskirts of the city, where buildings are not close together. The inspectors were instructed to use a tape line, but in many cases they evidently did not do so. The expense of changing the numbers will fall upon the contractor, where it was his fault that the numbers were wrongfully placed, and where the fault rested upon the inspectors who made the designations the cost will be borne by the city.

President Urges Investigation of Building Department

Washington, D. C.—President Roosevelt has sent to Congress a message recommending that Congress appoint a commission of three members, with power to administer oaths, to make a thorough investigation of the building department of the District of Columbia and that Congress appropriate \$3,500 to defray the expenses of the commission. The circumstances which led up to this message was the falling of a building in course of construction last November. At that time the President ordered Commissioner Neill, of the Department of Commerce and Labor, to make an investigation. He did so and has rendered a report which the President included in his message. Commissioner Neill said that six weeks had been spent in the investigation and as the net result of the inquiry it was demonstrated that no satisfactory clearing up of the matter could be had without a thorough investigation by a body having power to summon witnesses and compel testimony. In the course of the inquiry charges all the way from inefficiency to dishonesty were made against some member of the Department, and the Commissioner concludes that investigation should be made in order to exonerate the Department from the charges or to convict any member of it found guilty.

Would Improve River by Assessment

Cleveland, O.—Referring to the proposition to improve the Cuyahoga River, Council is considering a resolution stating its belief that, as the river is but a highway, the owners of land fronting upon it should pay a proportional cost of its improvement, as owners of land on other highways must do. This is especially important for the reason that very little of the property fronting upon the Cuyahoga river is appraised for more than 15 per cent. of its actual cash value; and, in order to still further escape local taxation, the owners of vessel property do not list their vessels for taxation in Cleveland. The resolution favors the enactment of an amendment to the Municipal Code, which will permit the city of Cleveland to levy a frontage tax upon the owners of land fronting upon the river to meet the expense necessary in keeping the highway open to the owners of vessels and land.

To Charge for Examinations of City's Plans

Philadelphia, Pa.—An ordinance is pending in Select Council providing that a fee of 25 cents shall be charged to every person who examines the city's books of municipal plans. Heretofore this privilege has been free. It is estimated that this new source of revenue will bring in from \$10,000 to \$20,000 yearly.

Engineers to Be Identified by Numbers

Seattle, Wash.—City Engineer R. H. Thomson will be the only man in that Department of the municipality who will not lose his identity when the old City Hall is vacated and the several city officials and appointees take up their quarters in the new building at Yesler way and Fourth avenue. Mr. Thomson has directed that numbers be given to the men immediately under his control and this system will become effective as soon as the new quarters are occupied. D. W. McMorris, principal assistant, will be No. 1 on the list and the others will trail along in the order of their positions until all of the two hundred attachés of the department will be designated by number rather than by name.

Teamsters Complain of Wide-Tire Ordinance

Salt Lake City, Utah.—Jake T. Raleigh, Street Supervisor, acting under the orders of the City Council, is now determined to enforce the wide-tire ordinance. This measure has been allowed to remain dormant for a year and a half that the teamsters might have time to get rid of their narrow tires. Recently Mr. Raleigh sent five of his deputies to serve notices on teamsters and leading firms employing many teams. The notices have the ordinance printed on the back and give the teamsters five days after the service to comply with its terms and fit their wagons with tires of the requisite width. The clause in the ordinance stating requirements which principally affect the teamsters reads:

Two (2) inches for over 2,000 pounds and not exceeding 3,000 pounds. Two and one-half (2½) inches for over 3,000 pounds and not exceeding 4,000 pounds. Four (4) inches for over 4,000 pounds and not exceeding 6,000 pounds. Five (5) inches for over 6,000 pounds and not exceeding 8,000 pounds. Six (6) inches for over 8,000 pounds and not exceeding 12,000 pounds. Eight (8) inches for over 12,000 pounds and not exceeding 30,000 pounds. For greater weights a permit to be issued on application to Council.

A number of owners of teams have protested against the wording of the ordinance. They claim an injustice is being done some of them in that the clause concerning tires makes no mention of those three inches in width, but jumps from two and a half-inch tires to four inches. The three-inch tire, they assert, is one of the most popular in use and they say that many teamsters in an attempt to comply with the new regulation fitted their wagons with three-inch tires. They will ask the Council to remedy this by fixing a standard for the three-inch tire and the weight of load such may carry.

LEGAL NEWS

Summary and Notes of Recent Decisions—Rulings of Municipal Interest

PAVING PROCEEDINGS—IRREGULARITIES

Paulsen vs. City of El Reno et al.—When a majority of the property owners on any street or part of a street of not less than 2,000 feet in length have duly petitioned the City Council of a city of the first class to pave such street, or part thereof, with material used for standard paving, designating the same, and said Council having proceeded to pave such street in accordance with the prayer of such petition, no resolution or notice of intention to pave, or publication thereof, being required, such improvement will not be restrained, or the power of equity permitted to be invoked, to stop such improvement, on account of irregularities in the procedure subsequent to the presentation of the petition as provided by law, when there is neither any allegation nor proof as to fraud, or that the party complaining sustains any specific injury on account thereof, or that there was reason to believe that there would have been a less bid for such paving, especially when the complainant never protested against said contract or sought to have such irregularities or defects remedied, corrected or amended before said Council, and afterwards stood by and permitted the contractor, without warning or protest, to proceed under said contract or undertaking, prejudicing himself by an outlay, and partially completing same by making a part of such improvement.—Supreme Court of Oklahoma.

PAVING SPECIFICATIONS MUST BE COMPLETE

City of Independence vs. Nagle et al.—Where specifications on file for paving adopted by the ordinance providing therefor refer to the formula, to accompany the bid, for additional specifications as to the asphalt surface, such additional specifications are not thereby adopted as a part of the original specifications, though the original specifications on file provide that the formula shall be so treated, and hence the work and material for the paving are not provided for by the ordinance, and the contract let is not the result of competition, as required to render valid tax bills issued against abutting property.—Kansas City Court of Appeals.

PURCHASE OF WATER WORKS BY CITY

Phillips Village Corporation vs. Phillips Water Company.—When a village corporation has made a contract for the purchase of the plant of a water company, and which contract was ultra vires at the time it was made, and afterward by a legislative act such corporation has been authorized to "vote to purchase the entire works and rights" of the water company "for such sums of money as may be adjudged payable according to the terms" of the contract, such authority may have a retrospective action and make valid the contract; but, when the corporation attempts to avail itself of the granted power, it must proceed according to the terms of the act, and first "vote to purchase," etc., "for such sums of money as may be adjudged payable," etc., before it can maintain a bill in equity for the specific performance of the contract.—Supreme Judicial Court of Maine.

PARK LAND TITLE

Doty vs. City of Cedar Rapids.—A city adopted ordinances vacating a dedication of land to the public for park purposes and conveyed the land. Subsequently the Marshal removed the building of plaintiff from a vacated street, and placed it on such land. Thereafter the city through the City Attorney forcibly removed plaintiff's building therefrom. The plaintiff alleged that no one owned such land. Held, that he could not maintain a suit to quiet title on the theory that the city had lost its title by its misuse of the land and its ordinance of vacation and conveyance, and that he had acquired some kind of a title, but his remedy, if any, was for the wrongful removal by the City Attorney of his building from the land.—Supreme Court of Iowa.

DAMAGES—DRAIN USED AS SEWER

Levasseur vs. City of Berlin.—Where plaintiff, without the knowledge of the city, connected his cellar by drain with a city water course which was not maintained as a sewer, his act was a wrongful interference with the city's property, and the city was not liable to him for a flooding of his cellar from an obstruction in the water course which forced water through his drain.—Supreme Court of New Hampshire.

DELINQUENT OFFICERS INDICTABLE

State vs. Glennen et al.—The Code of 1906 requires the Mayor and Aldermen to publish annually a statement of the taxes collected and expenditures, and that if there has been an increase of taxation over the year next preceding, or if the city's indebtedness has been increased by contract or ordinance, participated in or voted for by the Mayor and Aldermen, unless the increase is authorized by the electors, the Mayor and Aldermen shall be suspended from office and their successors shall be appointed by the Governor. Held, that it was the duty of the Mayor and Aldermen of the city under such section to submit the question of an increase of taxation to the electors. The Code of 1906 provides that if any person, being an officer of any city, shall knowingly or wilfully neglect or refuse to perform any of the duties required of him by law, or shall violate his duty in any respect, etc., he shall, on conviction, be fined not exceeding \$1,000, or be imprisoned in the county jail not exceeding six months, or both. Held, that where the Mayor and Aldermen of a city failed to give notice of an election to determine the question whether there should be an increase in taxation for a specified year, as required by the Code, they were subject to indictment, though the only penalty prescribed by another section was removal from office. Where an indictment was properly quashed for curable defects, and the defendants were subject to indictment for the offense charged, the court should have held them to answer a proper indictment, and should not have discharged them.—Supreme Court of Mississippi.

INJURY TO PROPERTY BY MOB

Sturges vs. City of Chicago.—Laws of 1887, declaring that when any property is injured in consequence of a mob or riot, the city, or, if not in a city, the county, in which the property was injured shall be liable to the owner for part of the damages, does not impose a liability on a city for property injured by a mob or riot assembling or occurring outside the limits and beyond the control of the city in which the property was injured. Laws of 1887, making a city liable for injury to property by a mob or riot therein, is not based on the negligence of the city, but is based on, and is within, the police power of the State.—Supreme Court of Illinois.

TAXATION—RIGHT TO ENJOIN

Farley vs. City of Lockport et al.—The provision of the act for the protection of taxpayers, permitting an action by a taxpayer to prevent any illegal official act, was not intended to authorize the restraint of every wrongful action, irrespective of whether it involved a waste of public property or a violation of the rights of the public, its purpose being to prevent usurpation of power by public officials from which public injury might result, and taxpayers may enjoin only such acts as are without the power of the officers or when fraud or bad faith amounting to fraud is charged, and the disregard of legal formalities by the Common Council of the city in enacting a resolution will not necessarily render it illegal within the meaning of the statute.—New York Supreme Court, Special Term.

MAYOR'S JURISDICTION IN LIQUOR CASES

City of Searcy vs. Turner.—Where the Mayor of a city obtained jurisdiction over an offense, the case, on appeal to the Circuit Court from a conviction, should not be dismissed for want of jurisdiction, merely on mistake of law made by the Mayor or for any other irregularity, but the Circuit Court should try the case de novo and render the proper judgment. Under Kirby's Digest, providing that no indictment is necessary in prosecutions in city courts, etc., an affidavit made before the Mayor of a city which avers that accused was keeping liquor at his place of business in the city for sale, and praying for a search warrant and a warrant which directs the Marshal to search the premises of accused, give the Mayor jurisdiction over a violation of the liquor laws by accused.—Supreme Court of Arkansas.

DEFECTIVE SIDEWALK—NOTICE

Ruth vs. City of Omaha.—A written notice to the Mayor and City Council of a metropolitan city, given more than five days before an injury caused by a defective sidewalk, that said walk for a designated space of two blocks, including the point where said injury occurred, "is in awful shape. People are tripping up and falling occasionally," and requesting an acknowledgment of the receipt of such communication "in order that proper damages may be secured should accidents occur thereon," is sufficient under Cobby's Statutes, 1907, where the proof clearly shows that the sidewalk over the entire space referred to in said notice was at said time in a defective and generally dangerous condition.—Supreme Court of Nebraska.

NEWS OF THE SOCIETIES

Connecticut Society of Civil Engineers.—The twenty-fifth annual meeting was held in Pythian Hall, Hartford, February 9, with President Edward W. Bush, of Hartford, in the chair. Secretary J. Frederick Jackson, of New Haven, made his annual report. Officers were elected as follows: President, Frederick J. Esterbrook, New Haven; first vice-president, Shepard B. Palmer, Norwich; second vice-president, Charles A. Ferry, New Haven; secretary and treasurer, J. Frederick Jackson, New Haven; directors, Henry J. Kellogg, New Haven; Edward W. Bush, Hartford, and Charles F. Chase, New Britain. In his annual address President Bush spoke of the damage done to roads and also of the defective descriptions of real estate deeds. He recommended that a committee be appointed to look into the matter of deeds. In the course of the discussion it was stated that lawyers used methods that were obsolete so far as engineering is concerned. A committee was appointed, on motion of Charles S. Farnham, of New Haven, requesting Congress to pass a bill for the construction of a testing machine capable of testing full-sized compression members. Under the escort of City Engineer Frederick L. Ford an inspection was made of the armory building. Benjamin W. Morris, of New York, architect of the building, read a paper on the use of concrete in building. Tuesday evening a dinner was given at the Hartford Club. On Wednesday Henry J. Kellogg read a paper on "Reinforced Concrete Sewers in New Haven." Roscoe N. Clark, of the City Engineering Department, Hartford, read a paper on "Tunnel and Concrete Sewer at Hartford." Edward W. Bush read a paper on "The Engineer in Court." Herbert E. Keith, of New York, read a paper on "Some Observations on the Life of Steel Bridges." G. M. Poley, of Waterbury, had written a paper on "A Reinforced Concrete Locomotive House at Waterbury," which President-elect F. J. Esterbrook, of New Haven, read. J. Frederick Jackson, of New Haven, read a paper on the "Cost of Sewer Work." Secretary Jackson read by title a paper by William Garvin Taylor, Waterbury, on "An Efficient Indexing System."

United Engineering Societies.—The February calendar of society meetings held in the Engineering Societies Building, 29 West Thirty-ninth street, New York, N. Y., illustrates the wide range of work covered by the technical associations housed in that building. The list is as follows:

- Feb. 2, N. Y. Soc. of Accountants and Bookkeepers, T. L. Woolhouse, Secretary.
- Feb. 4, Blue Room Engineering Society, W. D. Sprague, Secretary.
- Feb. 5, Explorers' Club, H. C. Walsh, Secretary.
- Feb. 9, N. Y. Soc. of Accountants and Bookkeepers, T. L. Woolhouse, Secretary.
- Feb. 11, Illuminating Engineering Society, P. S. Millar, Secretary.
- Feb. 12, Amer. Institute of Electrical Engineers, R. W. Pope, Secretary.
- Feb. 16, N. Y. Soc. of Accountants and Bookkeepers, T. L. Woolhouse, Secretary.
- Feb. 16, N. Y. Telephone Society, T. H. Laurence, Secretary.
- Feb. 17, N. Y. Electrical Society, G. H. Guy, Secretary.
- Feb. 19, N. Y. Railroad Club, H. D. Vought, Secretary.
- Feb. 23, American Geographical Society, A. A. Raven, Secretary.
- Feb. 23, Amer. Soc. Mechanical Engineers, C. W. Rice, Secretary.
- Feb. 23, Amer. Soc. of Accountants and Bookkeepers, T. L. Woolhouse, Secretary.
- Feb. 24, Municipal Engineers of N. Y., C. D. Follock, Secretary.

Ohio Engineering Society.—At the recent annual meeting of the society at Columbus, one of the topics of discussion which aroused the most interest was the means to be employed for raising the engineering profession in Ohio to a higher standard. The plan proposed was the creation of a State Board of Examination. A bill covering the desired points is now pending before the Ohio Legislature. The bill is in the hands of C. A. Judson, Sandusky, chairman; Professor C. E. Sherman, Ohio State University; John Laylin, Norwalk; J. M. Harper, Cincinnati; A. F. Cole, Marietta; E. G. Bradburg, Columbus, as a special committee. A fund is being raised to push the measure, in an effort to secure action this spring. F. A. Van Dusen, former representative from Huron County, who introduced the bill last year, will be retained to work for it. An examining board of five members is provided to give representation to mining, sanitation, civil and the other branches. It was again unanimously indorsed. Those who have been working in Ohio for three years are exempt from examination. The bill is declared to be a precedent for other States. Action was taken at a business meeting making the requirements for admission to the society more rigid, and the initiation fee increased, as part of the effort to raise the standard of Ohio engineering. The scope of the organization was enlarged by the adoption of an amendment to the constitution providing for the organization of local societies in the cities.

Appalachian Engineering Association.—The annual meeting of the association was held at Morgantown, W. Va., February 6. After the election of officers the following papers were read and discussed: "Municipal Short-sightedness," by Prof. D. C. Weller, city engineer of Waynesboro, Pa.; "Methods Used and Results Obtained in Triangulation of the Fairmont Region," by Mr. John G. Smyth, chief engineer of the Fairmont Coal Co.; "Reinforced Concrete Construction," by President A. Wagner, chief engineer of the Newport News Light & Water Co.; "The Surveyor vs. The Engineer," by Mr. Guy B. Hartley, of Morgantown, W. Va. At the evening session was given a stereopticon lecture on "Machine Mining with the Electric Puncher," by Mr. L. F. Crawford, of Pittsburg, Pa., followed by Mr. E. A. Schubert, of the Norfolk & Western Railway, and short talks on "Good Roads," "Concrete Construction" and "Railroad Work," by Professors Morris and Boughton, Mr. C. McC. Lemley, of the B. & O. R. R., Dr. I. C. White and others.

Wisconsin Society of Engineers.—It is proposed by forty or more engineers of the State of Wisconsin, representing cities, public utilities, colleges and manufacturing plants, to organize a State society along the same lines as those which are now in existence in Illinois, Indiana and other States. The purpose of this society is to get the engineers of the State better acquainted with each other and to get a better understanding of problems that are of mutual interest to all of us and to discuss some of the leading municipal and other problems of the day. It is proposed to hold the first meeting in Madison in the Engineering Building at the University on February 24, 25 and 26. Professor F. E. Turneaure, Dean of the College of Engineering, is chairman of the program committee and W. G. Kirchoffer is secretary of this committee, and receives all correspondence.

Washington Society of Engineers.—A personally conducted tour of the Government Printing Office was made February 2 by the Washington Society of Engineers, the members of which were the guests of Public Printer Donnelly. The start was made from the main entrance on North Capitol street by taking the south elevator to the seventh floor. On the south side of this floor the bills and *Congressional Record* are composed on the linotype machines, 79 in all, the largest number in any one office in the world. The bills are printed from the original line of type, the *Record* being stereotyped, averaging about 30,000 copies daily. The metal room came next, with its three large metal pots, where the old type and scraps of metal from the machines and foundry are remelted and cast into ingots. These receptacles hold about five tons of metal each. The adjoining room is the electrotpe and stereotype division. The visitors were then shown through the keyboard section on the sixth floor, to the ruling and sewing sections on the fifth floor; to the main press room, where 87 of the total 128 presses are located; then to the pamphlet covering machines and the 101 other features of the most complete printery in the world.

American Society of Hungarian Engineers and Architects.—A number of Hungarian engineers and architects pursuing their professions in this country have organized a society with two objects—first, to bring in closer touch engineers and architects of Hungarian extraction, living in this country, and to give moral support and information to newcomers; second, to encourage the exchange of engineering, technical and industrial information between the technical men of Hungary and of the United States and to foster technical societies, sciences and industries. The society will hold monthly meetings, where papers will be read and discussed. The membership consists of mechanical, electrical and civil engineers, chemists, architects and draftsmen. Following are the officers of the new society: President, A. Henry Pikler, M. E., member of the American Institute of Electrical Engineers, Engineer in Charge of Transformer Department Crocker-Wheeler Company, Ampere, N. J.; Vice-President, Karoly Z. Horvay, Architect, Chief Draftsman Building Bureau of Board of Education, Brooklyn, N. Y.; Secretary, Zoltan de Nemeth, M.E., New York Edison Company; Treasurer, Sandor Oesterreicher, E.E., Associate Member of the American Institute of Electrical Engineers and of the American Society of Mechanical Engineers, New York Edison Company; Assistant Secretary, Ernest L. Mandel, B.S.C.E., Bureau of Commissioner of Public Works, New York City. The society's business address is Box No. 1031, New York City.

International Association of Police Chiefs.—Owing to changes made in the Police Department of Los Angeles, Cal., the members of the International Association of Police Chiefs will not meet there this year, as they had expected. Major Sylvester, Superintendent of Police, Washington, D. C., president of the association, has had the secretary send notices to members of the organization to have them select another place for the meeting. Buffalo, N. Y.; Birmingham, Ala., and Atlanta, Ga., have extended invitations to the association, and it is believed that one of the three cities will be selected as the place for holding the annual convention.

Arkansas Good Roads Association.—At the convention, Hotel Marion, Little Rock, Ark., January 26, Governor Donaghey spoke on "Convicts and Good Roads," advocating the employment of part of the State's prisoners on the highways. E. A. Kingsley, Superintendent of Public Works, Little Rock, delivered an address on the "Construction and Maintenance of Macadam Roads." Professor Henry S. Hartzog, of Ouachita College, spoke of the "Relation of Good Roads to Education." Speaker Epps Brown, of the House of Representatives, spoke of the organization of a State road department, advocating the employment of an engineer as its head. Senator M. H. Patterson, Augusta, spoke of the measure now pending in the Senate providing for the employment of convicts on roads. Judge M. A. Falconer, former president of the association, spoke of State aid.

American Society of Mechanical Engineers.—The next monthly meeting will be held at Engineering Societies' building, on February 23, the fourth Tuesday of the month, instead of the second Tuesday, as usual. The subject of the evening's discussion will be "Safety Valves," introduced by a brief paper by Mr. Frederic M. Whyte, General Mechanical Engineer of the New York Central lines. Mr. Whyte will discuss the principles of the application of safety valves to steam boilers with special reference to locomotive practice, including questions of design and construction, and the requirements and limitations of valves. His paper will be followed by a general discussion covering marine and stationary practice and conditions existing in connection with low-pressure heating boilers.

Municipal Art Society of New York.—An important meeting of the Municipal Art Society was held February 8 in the gallery of the National Arts Club, No. 119 East Nineteenth street. Among matters of interest discussed by distinguished speakers was that of the coming celebration of the Hudson-Fulton Memorial. Plans and scope were fully described; drawings and pictures of floats and decorations and other features were exhibited. The meeting was also interesting, as it showed what an amount of work has been done by the society in the way of improvements on public parks, playgrounds for children, street signs and other important matters. Henry W. Sackett, secretary of the Commission, made an address on the Hudson-Fulton Memorial Celebration.

Tree Planting Association of New York.—President Cornelius B. Mitchell and Secretary Charles R. Lamb, of the Tree Planting Association, at a meeting at the National Arts Club, February 9, read reports showing encouraging progress in the association's work. Bishop David H. Greer was elected to fill the vacancy on the Board of Trustees caused by Bishop Potter's death. The following directors, to succeed the outgoing class of 1908, were elected: Lincoln Cromwell, William Louis Detmold, J. T. Ijams, Charles R. Lamb, A. P. Montant, Theodore W. Morris, Charles Thaddeus Terry and Cornelius B. Mitchell.

Minneapolis Engineers' Club.—The annual meeting was held at the club-rooms, 17 South Sixth Street, and new officers named. W. P. Cowles read a paper on reinforced concrete. W. S. Pardee announced that the various papers on the matter of pure water for Minneapolis are about ready for publication. The election of officers re-

sulted in the selection of the following: President, W. P. Cowles; Vice-President, Edwin H. Brown; Secretary, Benjamin Waller; Treasurer, B. H. Stahr; Librarian, W. W. Redfield; Finance Committee, E. P. Burch and William R. Hoag.

Calendar of Meetings

February 17.
New York Electrical Society.—Regular meeting, Engineering Societies Building, 29 W. 39th street, New York, N. Y.—G. H. Guy, Secretary.

February 17.
American Society of Civil Engineers.—Regular meeting at Society House, 220 West Fifty-seventh street, New York.—Charles Warren Hunt, Secretary.

February 17-18.
New England Gas Association.—Annual meeting, Boston, Mass.—N. W. Gifford, Secretary, East Boston, Mass.

February 24.
Municipal Engineers of New York.—Regular meeting, Engineering Societies Building, 29 W. 39th street, New York, N. Y.—C. D. Pollock, Secretary.

March 2-4.
Northwest Cement Products Association.—Annual convention, Minneapolis, Minn.—J. C. Van Doorn, Secretary Security Bank Building, Minneapolis, Minn.

June 8-12.
American Water Works Association.—Twenty-ninth annual convention, Milwaukee, Wis.—J. M. Diven, Secretary, 14 George St., Charleston, S. C.

July 6-9.
American Society of Civil Engineers.—Annual convention, Mount Washington Hotel, Bretton Woods, N. H.—Charles Warren Hunt, Secretary, 220 West 57th street, New York, N. Y.

November 9-11.
American Society of Municipal Improvements.—Annual convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.

PERSONALS

ANDERSON, CARL C., Mayor of Fostoria, O., who maintains that he can hold the offices of Mayor and Representative to Congress at the same time, and is sanctioned by Attorney-General Denman, proposes to give his salary as Mayor to the public library.

BOBBETT, B. B., Publicity Director of Long Branch, N. J., has been reappointed for two years by Mayor McFaddin.

COLE, HOWARD J., a civil engineer and surveyor, who has been in charge of the Essex County Parkway of New Jersey, has been appointed by the Board of Aldermen of Morristown, N. J., as Street Commissioner and Superintendent of Sewers at \$2,000 a year. He is a graduate of Union College and for many years was assistant engineer with John Bogert, consulting engineer of the New York State Board of Health. James Dickson, former Street Commissioner, will probably be employed by the town as foreman of the street work, although the appointment will rest with Mr. Cole, who is not a resident of Morristown.

CORTWRIGHT, MOSES W., Chief Inspector of the Police Department of New York City, has been retired on his own request on half pay in the sum of \$2,500 per annum. He is sixty-nine years old, had been on the force forty-two years, and three times refused to be head of the force. He is known among his associates as "Honest Abe," and General Theodore Bingham, Police Commissioner, in a general order announcing the retirement of the Chief Inspector, held him up as the "model police officer," whose "integrity, honesty, capacity, modest demeanor, etc., entitled him to this special consideration."

DEAN, F. W., Boston, Mass., mill engineer and architect, is acting for the city of Baltimore, Md., in the matter of valua-

tion of plant and property of the Warren Manufacturing Company, of Warren, Md., in which are concerned some interesting questions as to the value of an old water power, with supplementary steam power, as compared with that of a modern steam plant for the development of all power.

HOWLAND, THEODORE, Fire Alarm Superintendent of Long Branch, N. J., has been reappointed by Mayor McFaddin for one year.

INSULANDAR, E. D., a civil engineer of Stockholm, Sweden, is inspecting the work of the engineering departments of various municipalities in this country, preparatory to recommending plans for the improvement of his home city, and recently was shown through the various municipal enterprises of Baltimore, Md.

LINKOUS, W. J., Mayor of Radford, Va., died recently of tuberculosis, aged forty-two years. He had been ill for a year, but performed the duties of his office until a month ago, and was serving his second term.

MALONEY, THOMAS, first Mayor of Pittston, Pa., died recently.

MORRIS, CHARLES E., Long Branch, N. J., has been appointed Sealer of Weights and Measures by Mayor McFaddin, to succeed Isaac Van Tine, who served four years, one term under Mayor Francis and one under Mayor McFaddin.

POYNTON, A. M., Assistant Inspector of Buildings, Washington, D. C., who has been in the District service since 1901, has resigned to go into business.

PIERSON, ISAAC R., and John R. Burr, members of the Board of Health of Morristown, N. J., have been re-elected by the Board of Aldermen.

REESE, JOHN S., Alderman of Winchester, Ky., has been elected City Treasurer for the ensuing year, and A. J. Hadden has been elected to succeed him in Council.

ROBINSON, NELLIE B., Milford, O., author and lawyer, is an applicant for the office of Mayor. Mayor S. A. Riehley has resigned.

SAGUE, JAMES E., and John E. Eustis have been reappointed by Governor Hughes and confirmed by the Senate as Public Service Commissioners for a term of five years at salaries of \$15,000 a year.

TAYLOR, HARRY C., Mayor of Versailles, Ky., for the past three years, has tendered his resignation to Council, but an effort will be made to have him reconsider. His term expires next December.

TOMLINSON, F. L., Mayor of Mt. Pulaski, Ill., died February 1.

INCORPORATIONS

Albemarle Construction Company, University of Virginia, Va.; capital, \$5,000. Incorporators: E. M. Wayland, President.

Dordian City Construction Company, Schenectady, N. Y.; to construct buildings and public works; capital, \$25,000. Incorporators: Alpheus G. Davis, Craig, N. Y.; Joseph J. Malloy, 1429 Albany street; Frederick B. Sheldon, 1415 Albany street, Schenectady; Louis E. Smith, Craig, N. Y.

Elastic Rock Paving Company, Antlers, Okla.; capital, \$10,000. Incorporators: Eugene Aston, Antlers; T. A. Johnson and S. W. Williams, both of Paris, Tex.

General Concrete Construction Company, 215 Dearborn street, Chicago, Ill.; contractors; capital, \$10,000. Tennessee corporation.

Polo Electric Light and Power Company, Sycamore, Ill.; to operate heat, light and power plant; capital, \$15,000. Incorporators: Byron J. Snow, James D. Beckler, William Fraser.

Rochester Construction Supply Company, Rochester, N. Y., to manufacture and deal in contractors' supplies; capital, \$15,000. Incorporators: James A. Turnbull, Prentiss B. Gilbert, Willard J. Emerson, Rochester.

Water Power Development Company, Boston, Mass.; to deal in water power devices of all kinds; capital, \$50,000. President and Treasurer, Richard F. Barry, 141 Milk street, Boston; Clerk, Howard C. Fisher, 19 Congress street, West Roxbury.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage
Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation
Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
South Carolina	Greenwood	Feb. 18, noon	Brick, wood block, bitulithic or granite paving, 21,333 sq. yds., grading, curbing, draining, Public Square.	Kenneth Baker, Mayor.
Indiana	Spencer	Feb. 18, noon	Constructing 1½ miles macadam road between Clay and Owen Counties.	Geo. W. Edwards, County Auditor. C. H. Troy, County Auditor. H. E. Parrott, Village Clerk.
Indiana	Greenfield	Feb. 18, 2 p.m.	Constructing 3,960 ft. macadam road; est. \$2,970.	
Ohio	Oakwood	Feb. 18, noon	Brick paving, Oakwood Avenue.	
Pennsylvania	Wilkes-Barre	Feb. 18, 2 p.m.	Furn. two 8-ton road rollers and 2 road sprinkling carts; also stone crusher, cap. 12 to 18 tons per hour; 15 h.p. engine; bins 10-ton cap.; chutes, screens, and elevator.	James M. Norris, County Auditor. C. S. Donaldson, Engr., Beaver Falls. Fred Drehs, Clk. Co. Comrs. Hermion Carlton, Sec'y Bldg. Impts. E. F. Wilson, Mayor.
Pennsylvania	College Hill	Feb. 19, 8 p.m.	Brick paving, 9,000 sq. yds.; 2,800 ft. 20 to 36-in. storm sewer.	
Ohio	Cincinnati	Feb. 19, noon	Improving Walton Creek road in Columbia twp.	
Arkansas	Lake Village	Feb. 20	Constructing 13,000 sq. ft. concrete sidewalks.	
Florida	Palmetto	Feb. 23	Paving with local rock; cost, \$14,000.	
Michigan	Lansing	Feb. 23, 4 p.m.	Brick paving on concrete, asphalt filler, 12,230 sq. yds., Cedar and Shawassee streets.	H. A. Collar, City Engineer.
New York	Syracuse	Feb. 23	Paving South State St., from Colvin St. to Brighton Ave.	F. T. Pierson, Sec'y Bd. Cont. & Sup.
New York	Mamaroneck	Feb. 24, 8:30 p.m.	Excavating 3,300 cu. yds. for grading, bldg. bridge, etc.	John M. Farley, C.E., White Plains.
Manitoba	Winnipeg	Feb. 24, 11 a.m.	Furnishing 2,500 to 3,500 tons of asphalt for street paving.	M. Peterson, Sec'y Bd. Control.
Ohio	Hamilton	Feb. 24, noon	Cement sidewalks, grading and graveling sts., curbing, etc.	Chr. Pabst, Sec'y Bd. Pub. Service.
Georgia	Savannah	Feb. 25, noon	Furn. 6,000 cu. yds. cement gravel or like material.	G. Reuben Butler, County Clerk.
Wisconsin	Waukesha	Feb. 26, 2 p.m.	St. imp. work to cost \$40,000, inc. 10,000 cu. yds. excavation; 18,000 lin. ft. combination curb and gutter; 26,000 sq. yds. macadam with tar surface.	John P. Dey, Chm. Bd. Pub. Wks. Village Clerk.
Ohio	Newton	Feb. 27, noon	Grading and constructing curb and gutters.	John M. Davis, County Auditor.
Indiana	Columbus	Mar. 1	Bldg. 5,177 ft. macadam on Marr road, Columbus twp.	William H. Nichols, County Auditor.
Indiana	Danville	Mar. 1	Bldg. 3 gravel roads, 14,572, 12,983 and 15,236 ft. long.	Scott Culbertson, County Auditor.
Indiana	Vevay	Mar. 1, 1 p.m.	Constructing 3-mile road in York township.	Clinton Gardner, County Auditor.
Indiana	Liberty	Mar. 1, 2 p.m.	Constructing gravel road in Union township.	Alvah H. Martin, Chm. Rd. Imp. Com.
Virginia	Portsmouth	Mar. 1, noon	Bldg. macadam road from Norfolk to Great Bridge.	R. S. Adams, Mayor.
Mississippi	Oxford	Mar. 1, 7 p.m.	Constructing 144,400 sq. ft. concrete and 7,460 sq. yds. macadam.	N. B. Mills, Chm. Co. Com., States' le. Board of Public Service.
North Carolina	Mooreville	Mar. 1	Constructing 4 miles of macadam road; C. M. Mills, Engineer.	J. F. Barlow, County Auditor.
Ohio	Canton	Mar. 1	Brick paving on gravel, 10,995 sq. yds.	Bennett B. Engle, County Auditor.
Indiana	Tipton	Mar. 1	Bldg. 3 gravel roads, one 8,293 ft. and one 1¼ miles long.	Geo. W. Edwards, County Auditor.
Indiana	Crawfordsville	Mar. 2, 10 a.m.	Constructing two roads in Clark township.	Peter M. Cook, County Auditor.
Indiana	Spencer	Mar. 2	Bldg. 3 pipe roads: 11,390, 10,547 and 15,800 ft. long.	John T. Scott, County Auditor.
Indiana	Bloomfield	Mar. 2, 2 p.m.	Bldg. 2 gravel and macadam roads, Wright & Stockton twps.	R. H. Canfield, Supt. Pub. Wks.
Indiana	Vincennes	Mar. 2, 2 p.m.	Bldg. 3 gravel roads: 7,605, 5,310 and 6,010 ft. long.	J. P. Noltzger, County Auditor.
New York	Corning	Mar. 4, 7:30 p.m.	Brick paving, 3,600 sq. yds.; macadam, 4,300 yds.; cement curb.	F. M. Sayre, County Auditor.
Indiana	Wabash	Mar. 4, 10 a.m.	Constructing County line gravel road, inc. graveling, etc.	Harry Weider, Clk. Graham Twp.
Ohio	Columbus	Mar. 9, noon	Macadamizing Gahanna Cemetery Imp., Millin Twp., etc.	A. B. Lea, County Surveyor.
Iowa	Iowa City	Mar. 15	Doing all or any portion of township road work.	J. A. Guss, Jonesville.
Ohio	Cleveland	Mar. 20, 11 a.m.	Grading, draining and improving Northfield road.	
Louisiana	Harrisonburg	April 5, noon	Building 4½ miles of road near Trinity.	
WATER SUPPLY				
Ohio	Cleveland	Feb. 17, noon	Furn. 8,000 ½-in. meters; also 200 tons meter manhole rings and covers; check for \$2,000 and \$500 respectively.	W. J. Springborn, Pres. Bd. Pub. Serv. Frederick L. Ford, City Engineer.
Connecticut	Hartford	Feb. 18	Furnishing 450 tons c. i. pipe, etc.	
Pennsylvania	Oil City	Feb. 18, 7 p.m.	Sale of Snow duplex comp. con. engine, steam jacketed 20-in. and 40-in. steam cylinders, 17-in. water cylinder, 24-in. stroke, Ind. air pump and condenser.	A. M. Breckenridge, Clk. Water Bd.
Illinois	Decatur	Feb. 19	Bldg. engine foundations and other masonry and concrete work, steel work, auxiliaries and piping for new pump station.	Albert Leach, City Clerk.
Ohio	Elyria	Feb. 19, noon	Furn. during 1909: 300 sets corporation and 300 sets curb cocks.	Rose Moriarty, Clk. Bd. Pub. Serv.
Mississippi	Itta Bena	Feb. 19, 2 p.m.	Constructing complete water works and sewer system.	Xavier A. Kramer, C. E., Magnolia.
Illinois	Colfax	Feb. 20, 7:30 p.m.	Engine found., concrete work, steel work, piping, etc., for new pumping station for water works.	Albert Leach, City Clerk.
New York	Fort Wood	Feb. 20	Installing 6-in. valve and water meter.	Lt. Wm. W. Bessell, Q. M.
Arizona	Bisbee	Feb. 20	Hydrants, pipes, tanks, etc., for new fire system.	City Clerk Gage.
New York	Webster	Feb. 20, noon	Bldg. w. w. system, inc. 6 miles c. i. pipe, pumping station, small reservoir, standpipe, power pumps, etc.	Knight & Hopkins, Rome, Engrs.
Manitoba	Winnipeg	Feb. 22, 11 a.m.	Furn. and erecting turbine pump with elec. motor for w. w.	H. N. Ruttan, City Engineer.
Washington	Mabton	Feb. 23, 10 a.m.	Furn. all material and bldg. complete water works system.	T. A. Noble, Town Engineer.
Michigan	Owosso	Feb. 24, 10 a.m.	Bldg. complete pneumatic pumping plant.	D. M. Christian, Pres. Bd. Pub. Wks.
Indiana	Fort Wayne	Feb. 24, 10:30 a.m.	Furn. 250 to 750 tons 6 to 12-in. c. i. pipe for 1909; also 48 6-in. and twelve 10-in. gate valves, and 300 ½-in. meters.	W. A. McInerney, Chm. Bd. Pub. Wks.
Saskatchewan	Saskatoon	Feb. 24, 8 p.m.	Furn. and erecting pumping engine, 1,200 or 1,500 U. S. gals. per minute.	City Clerk.
Nebraska	Lincoln	Feb. 24, noon	Bldg. 1,000,000-gal. reservoir; rein. concrete, \$13,200; brick, \$15,100.	Wm. Grant, City Engineer.
Utah	Salt Lake City	Feb. 26	Bldg. No. Temple St. aqueduct from 4th W. St. to river.	Louis C. Kelsey, City Engineer.
Minnesota	Internat'l Falls	Feb. 27	Bldg. \$22,000 water works; Wm. C. Fraser, Rochester, Engr.	T. B. Green, Village Recorder.
Virginia	Urbanna	Mar. 1	Constructing water works; tank on hill, 60 ft. above well; ram and 4-in. pipe to be installed.	John D. Gressit.
Saskatchewan	Saskatoon	Mar. 1	Material for water works and sewage works, inc. c. i. pipe and specials, 280 tons; fire hydrants, gate valves, pump, mach.	J. H. Truesdale, City Clerk.
Iowa	Anamosa	Mar. 1	Improving w. w. inc. reservoir, meters, mains, etc.	City Clerk.
Wisconsin	Milwaukee	Mar. 1, 10:30 a.m.	Furn. material and laying 36-in. c. i. water main across Milwaukee River from Bradford Ave. to Wright St., West Side.	C. T. Poetsch, Pres. Bd. Pub. Wks.
Illinois	Rock Island	Mar. 1, 5 p.m.	Bldg. complete mechanical filtration plant for city.	M. J. Rudgren, City Clerk.
Illinois	Summit	Mar. 1, 8 p.m.	Furn. mechanical equipment for pumping water from deep well to tank, 125 ft. high.	James Johnstone, Village Clerk.
New Jersey	North Arlington	Mar. 3	Furn. and laying 17,340 ft. 6-in., 6,960 ft. 8-in., 280 ft. 4-in. c. i. bell and spigot pipe, hydrants, valves, etc.; new bids.	Wise & Watson, Engrs., Rutherford.
Montana	Ft. Assiniboine	Mar. 4, 11 a.m.	Bldg. 150,000-gal. steel water tank and trestle.	J. E. Sawyer, U. S. A., St. Paul, Minn.
Wisconsin	Waukesha	Mar. 4, 2:30 p.m.	Furn. 18,000 ft. c. i. pipe, castings, valves, hydrants, etc.	E. Merten, Pres. Bd. Water Comrs.
Mexico	City of Mexico	Mar. 10	Furnishing 12,000 tons c. i. pipe, mainly 4 to 30-in., with some 36 to 48-in.	The Mayor.
Ohio	Toledo	Mar. 11, noon	Bldg. c. i. pipe conduit, concrete culvert and gate chamber at Creek.	Reynold Voit, Sec'y Bd. Pub. Serv.
Pennsylvania	Lebanon	Mar. 11, 5 p.m.	Enlarging dam No. 2 of gravity water supply system, inc. 33,000 cu. yds. earth in dam breast, concrete intake tower 50 ft. high.	T. R. Crowell, City Engineer.
Massachusetts	Boston	Mar. 11, 10 a.m.	Bldg. meter chambers and install. meters, Ft. Warren and Gallops, Island.	Capt. R. H. Rolfe, 263 Summer St.
Oklahoma	Muskogee	Mar. 15, 5 p.m.	Furn. 4,000,000 gal. high and 5,000,000-gal. low service pump and 250 h.p. tubular boiler.	Morgan Caraway, City Clerk.
Kansas	Wichita	Mar. 15, 7:30 p.m.	Constructing system of water works; est. cost, \$860,000; cert. check, \$10,000; plans, \$25; Hiram Phillips, St. L., Mo., Engr.	R. N. Dorr, City Clerk.
Pennsylvania	Philadelphia	Mar. 15	Bldg. new filtration plant at Queen Lane Pumping Station for supplementary supply, inc. 26 final filters and 54 preliminary filters, capacity 60,000,000 gals. per day.	Dept. of Public Works.
California	Petaluma	May 5, 7 p.m.	Furn. and install. pump, mach. for salt water high pressure system	City Clerk.

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE				
Pennsylvania	College Hill	Feb. 19, 8 p.m.	Constructing 2,800 ft. 20 to 36-in. storm sewer, paving, etc.	Town Council.
New York	Buffalo	Feb. 18, 11 a.m.	Bldg. brick and tile sewers in portions of numerous streets.	F. G. Ward, Com'r Pub. Wks.
Mississippi	Itta Bena	Feb. 19, 2 p.m.	Constructing complete sewer system and water works.	Xavier A. Kramer, C. E., Magnolia.
Alabama	Birmingham	Feb. 20	Constructing 6,380 ft. sanitary sewer.	County Sanitary Com'n.
Texas	Denton	Feb. 20, 2 p.m.	Furn. material and labor or labor alone, for sanitary sewer system, inc. 13,635 ft. 8 to 15-in. and 32,860 ft. 6-in. pipe; 21 manholes, 68 tampholes, also 100,000-gal.-per-day unit of disposal plant, requiring 755 cu. yds. earth excav., 130 cu. yds. concrete, 4,000 lbs. rein. steel, 500 cu. yds. screened gravel or broken rock and auto. appar. for filling and emptying 3 beds.	N. Werenskiold, C. E., Dallas.
Louisiana	Natchitoches	Feb. 22, noon	Furn. mat., laying sewer, etc., from Court House and jail.	P. E. Prudhomme, Pres. Police Jury.
Ohio	Steubenville	Feb. 23, noon	Labor and mat. for sewers in Seventh St. and Court St. extens'n.	H. G. Simpson, Clk. Bd. Pub. Serv.
New York	Kings Park, L. I.	Feb. 24	Sewage disposal works, etc., at State Hospital.	T. E. McGarr, Capitol, Albany.
Ohio	Hamilton	Feb. 24, noon	Constructing sanitary sewers in sundry streets, paving, etc.	Chr. Pabst, Sec'y Bd. Pub. Service.
New York	Rochester	Feb. 24, 3 p.m.	Sewer and ejector at Rochester State Hospital.	T. E. McGarr, Capitol, Albany.
Ohio	Youngstown	Feb. 25, noon	Labor and material for sewerage Una St.	Wm. H. McMillan, Clk. Bd. Pub. Ser.
Kentucky	Louisville	Feb. 26, noon	Bldg. Twelfth St. sewer Contract No. 25; 3,900 ft. long, 16 to 27 ft. deep, inc. 3,350 cu. yds. concrete and 320,000 lbs. steel.	J. B. F. Breed, Ch. Eng'r Sewer Com.
Ohio	Newton	Feb. 27, noon	Bldg. drain from South Side Main St. to Clear Creek.	Edgar W. Griffith, Village Clerk.
Connecticut	New London	Mar. 1, noon	Bldg. and laying submerged wooden outfall sewer and settling basin, and laying tile pipe connections.	W. H. Richards, Eng. W. & S. Comrs.
Saskatchewan	Saskatoon	Mar. 1	Furn. 20,000 ft. sewer pipe, etc., for sewage works.	Willis Chipman, C. E., Toronto, Ont.
New York	Newburgh	Mar. 2	Constructing sewer in Robinson Ave. with laterals.	City Clerk.
Missouri	St. Louis	Mar. 2, noon	Bldg. brick and pipe sewers; est. cost, \$210,000.	A. J. O'Reilly, Pres. Bd. Pub. Wks.
Kentucky	Louisville	Mar. 5, noon	Bldg. Sec. B, Castlewood sewer; Cont. No. 26, inc. 2,770 ft. 36 to 42-in. concrete sewer, 9 to 18 ft. deep; 675 cu. yds. concrete.	H. P. Eddy, Boston, Mass., C. E.
Iowa	Grundy Center	Mar. 8	Constructing 8 and 10-in. san. sewer; cost, \$15,000 to \$18,000.	E. A. Crary, Chm. Sewer Com.
BRIDGES				
Illinois	Chicago	Feb. 18, 11 a.m.	Furn. mat., repairing and reinforcing Van Buren St. bridge, inc. renewing structural steel support for counterweights at rear ends of leaves, placing additional roadway stringer under tracks, reinforcing cantilever parts, etc.	John J. Hanberg, Com'r Pub. Wks.
Illinois	Hanover	Feb. 20, 5 p.m.	Bldg. foundations and superstructure of bridge over Dew Creek.	Bridge Commissioners.
Ohio	Cleveland	Feb. 20, 11 a.m.	Bridge work, per Report No. 2,189; 2 culverts, Newburg twp.	A. B. Lea, County Surveyor.
Oklahoma	Tulsa	Feb. 24	Constructing 13 bridges; \$2,500 check; plans for \$10.	W. L. North, Chm. Co. Comrs.
Pennsylvania	Williamsport	Feb. 24, noon	Furn. f.o.b. cars Waterville, 151 pcs. steel I-beams; also 35,000 ft. chestnut or oak plank.	A. P. Zuber, Clk. Co. Comrs.
New York	Mamaroneck	Feb. 24, 8:30 p.m.	Bldg. 35x50 ft. 8-in. concrete arch bridge, grading, etc.	Daniel Warren, Pres. Village Trus.
Kansas	Westmoreland	Feb. 25, 2 p.m.	Bldg. 300 ft. steel approach to Stockdale bridge at Blue River.	H. G. Huckstadt, County Clerk.
Montana	Powderville	Mar. 1	Constructing bridge over Powder River for County.	County Clerk, Miles City.
Michigan	Lansing	Mar. 1	Bldg. bridge over Cedar river, 140-ft. clear span, 30-ft. roadway, with two 6-ft. walks.	H. A. Collar, City Engineer.
Indiana	Shoals	Mar. 1, 1 p.m.	Constructing fill at Furs Creek bridge, McCameron twp.	John T. Morris, County Auditor.
South Dakota	Faulkton	Mar. 2, 2 p.m.	Bldg. 2 steel bridges over Nixon river, 70 and 100 ft. long resp.	W. H. Race, County Auditor.
North Dakota	Grafton	Mar. 2, 2 p.m.	Erecting all pile and steel bridges and repairing all in 1909.	Q. M. Fraser, County Auditor.
Ohio	Cleveland	Mar. 3, 11 a.m.	Constructing bridge approach, Independence twp., per Report 2210.	A. B. Lea, County Surveyor.
Arkansas	Paris	Mar. 4	Constructing 6 bridges for County.	Fred N. Cater, County Clerk.
Ohio	Cleveland	Mar. 6, 11 a.m.	Bldg. sub and steel superstructure, Mastick road, over Rocky river.	A. B. Lea, County Surveyor.
Ohio	Zanesville	Mar. 8, noon	Bldg. 85-ft. span, 14-ft. roadway, over Creek in Meigs twp.	L. E. Brelsford, County Auditor.
Louisiana	Harrisonburg	Apr. 5, noon	Bldg. steel bridge at Bushley Bayou; also repairing one.	H. W. Bethard, Clk. Police Jury.
Ohio	Columbus	Mar. 9	Bldg. subs. and superstructures, floors, etc., of bridges.	F. M. Sayre, County Auditor.
LIGHTING AND ELECTRICITY				
Ohio	Cincinnati	Feb. 18, noon	Furn. material, rewiring, etc., Eden Park Tower.	John J. Wenner, Clk. Bd. Pub. Serv.
Alberta	Calgary	Feb. 18, noon	Three water tube boilers of 1,000 h.p., with piping and induced draft system of 2,500 h.p.; 500 k.w. generator con. to 750 h.p. high-speed engine for ry. system, cond. switchboard, etc.	H. E. Gillis, City Clerk.
Ohio	Bucyrus	Feb. 18, noon	Furn. current for elec. lighting sts., etc.; check, \$10,000.	Board of Public Service.
Ohio	Cambridge	Feb. 20, noon	Elec. lighting sts., public places, etc., 10 years from June 1.	A. J. Hall, Pres. Bd. Pub. Service.
Ohio	Lorain	Feb. 20, noon	Lighting city for 5 or 10-year period.	A. W. Thomas, Clk. Bd. Pub. Serv.
Iowa	Des Moines	Mar. 1, noon	Bldg. electric light and power plant for Co. Court House and Jail.	Proudfoot & Bird, Flynn Bldg. Archts.
Alberta	Lethbridge	Mar. 1	Bldg. mun. power plant, inc. boilers, etc., economizer, feed pumps, mechanical draft pipe work and valves, steam turbine generator; re-erecting engines; condensing sets, crane, switchboards, etc.; motor generators and transformers; bldg. steel work, etc.; Smith, Kerry & Chace, Toronto, Engrs.	Geo. W. Robinson, Sec'y-Treas.
Manitoba	Winnipeg	Mar. 2, 11 a.m.	Insulators, telephone line, erecting transmission line, repair shop equipment for Hydro-electric development.	M. Peterson, Sec'y Bd. Control.
Wisconsin	Milwaukee	Mar. 5, noon	Lighting with naphtha or other illuminants parks and parkways for 3 or 5 years.	Daniel Erdmann, Chm. Park Bd.
South Carolina	Sumter	Mar. 9, noon	Furn. 50 enclosed incan. arc lights, 6.6 amperes, 2,000 nom. c. p., all within one mile radius; also 50 to 80 add'l lights; 10-year contract from Nov. 1.	C. M. Hurst, City Clerk.
Dist. of Col'bia	Washington	Mar. 22	Furnishing electrical supplies, etc., for Bur. Eng. & Printing.	Joseph E. Ralph, Dir. B. E. & P.
MISCELLANEOUS				
Iowa	Newton	Feb. 18, 2 p.m.	Bldg. Court House Co.; Proudfoot & Bird, Des Moines, Archts.	Frank Sellman, County Auditr.
Alberta	Calgary	Feb. 18, noon	Furn. 1,143 tons steel rails, spikes, tie plates, bolts, ties, etc.; also 12 standard railway cars, one railway sprinkler, and one sweeper; poles, trolley wire, etc., for electric railway.	H. E. Gillis, City Clerk.
Ohio	Cleveland	Feb. 19, noon	Furn. new boiler and rebldg. Manning steam fire engine.	M. B. Excell, Pres. Fire Board.
Pennsylvania	Harrisburg	Feb. 20, noon	Bldg. engine house for Allison Hook and Ladder Co.	Warren Shaffer, Bldg. Inspector.
Arizona	Globe	Feb. 20	Bldg. concrete wall around hospital block, grading, etc.	J. E. Wentworth, City Clerk.
California	Sacramento	Feb. 23	Dredging and leveling South Side Park.	M. J. Desmond, City Clerk.
New York	Troy	Feb. 23, 2:30 p.m.	Bldg. \$25,000 Co. hospital, excepting heating.	Supervisor Campaigne, Chm. Special Committee Co. Commissioners.
Pennsylvania	Wilkes-Barre	Feb. 23, 2 p.m.	Furn. 4 or 7-passenger touring automobile, complete.	James M. Norris, County Controller.
New York	Rochester	Feb. 24, 11 a.m.	Bldg. annex to Monroe County jail; Crandall & Strohl, Archts.	Chas. E. Shafer, Chm. Co. Comrs.
Manitoba	Winnipeg	Feb. 24, 11 a.m.	Furnishing 2 high-pressure hose wagons for Fire Dep't.	J. E. Buchanan, Chief Fire Dept.
Missouri	St. Louis	Feb. 24, noon	Bldg. 3-story and 1-story police station; cost, \$25,000.	Jas. A. Smith, Com'r Pub. Bldgs.
California	San Francisco	Feb. 25, 9:15 a.m.	Furn. mat. and bldg. pier No. 34, inc. piles, cement, reinforcing material, castings, steel I-beams, plates, angles, bolts, rivets, spikes, steel rails, crushed rock, etc.	W. B. Thorpe, Sec'y Harbor Com.
Minnesota	Fort Snelling	Feb. 26, 11 a.m.	Constructing an ice house.	Capt. R. C. Croxton, Q.M., U. S. A.
Ohio	Northfield	Feb. 27, noon	Bldg. Town Hall; new bids. Moore Arch. & Eng. Co., Akron.	J. F. J. Richey, Pres. Twp. Trus.
Nebraska	Omaha	Mar. 1, noon	Bldg. Court House for Douglas Co.; John Latenser, Archt.	D. M. Haverly, County Clerk.
California	Sacramento	Mar. 1	Bldg. additional garbage incinerating unit.	M. J. Desmond, City Clerk.
Florida	Jacksonville	Mar. 2	Bldg. complete garbage and refuse disposal plant of 40 tons capacity; also plant of 50 tons capacity.	N. C. Wamboldt, Chm. Bd. Pub. Wks.
New York	Buffalo	Mar. 5, 11 a.m.	Bldg. Subd. A, Sec. No. 2, Buffalo river and Cazenovia Creek improvement.	F. G. Ward, Com'r Pub. Wks.
Wisconsin	Milwaukee	Mar. 31, 10:30 a.m.	Bldg. refuse incineration plant, complete, except superstructure of bldg. and chimney, as stated in Feb. 10 issue.	Chas. J. Poetsch, Chm. Bd. Pub. Wks.
Uruguay, S. A.	La Paloma	Apr. 2	Construction of harbor.	Dept. of Pub. Wks., Montevideo.
Illinois	Chicago	Sept. 15	Furn. voting machines up to \$100,000 value.	Election Commissioners.

STREET IMPROVEMENTS

Pasadena, Cal.—Orange Grove avenue from Colorado street to Columbia street will be newly paved during the coming summer if the plans of the property owners evolved at a meeting held last night are carried out as expected; it has been practically decided to use the base of the present paving on the avenue, and to cover this with a surface of broken vitrified rock; specifications are to be prepared by a committee which includes A. H. Fleming, Fred E. Wilcox, Lawrence Hurlburt, E. D. Barry and John S. Cravens.

Pasadena, Cal.—City Trustees are considering the establishment of grades on Forest and La France avenues.

Sacramento, Cal.—The Board of City Trustees has ordered specifications for macadamizing the intersection at Twenty-third and F streets; also plans and specifications for oiling all the macadam streets in the city.

Wilmington, Cal.—The Good Roads Committee of the Chamber of Commerce of Wilmington after conferring with the Highway Commission, decided to recommend to the Wilmington Trustees a \$40,000 bond issue for the purpose of extending the reconstructed Main street from Los Angeles to the beach, as planned by commission; route of the proposed macadamized highway, which will be one of the finest in the county, will extend through Wilmington by way of J street and along the bay between Wilmington and San Pedro, a distance of approximately three miles.

Hartford, Conn.—The Board of Street Commissioners has authorized laying of a sidewalk and curb on Garden street.

Hartford, Conn.—Council has received petitions for macadamizing Prospect avenue and Pliny street.

Jacksonville, Fla.—The City Engineer will prepare plans for the paving of Davis street; property owners on May, Lafayette, Van Buren, Adams and Monroe streets have been ordered to construct proper sidewalks.

Orlando, Fla.—City has ordered the paving of West Pine street and Central avenue with vitrified brick.

Palmetto, Fla.—City will let contracts for street paving very soon.—E. F. Wilson, Mayor.

Pensacola, Fla.—The Board of Public Works has asked Council for an appropriation of \$1,000 to build walks around R. E. Lee square.

Sanford, Fla.—City is considering paving of First street with brick.

Albany, Ga.—Council has decided to pave Broad street with vitrified brick; estimated cost, \$10,260.

Columbus, Ga.—Council has authorized macadamizing of Third avenue; also adopted ordinances for grading and curbing Cemetery street and Tenth avenue, and paving of several other streets, including Second avenue, Seventeenth and Fifth streets.

Macon, Ga.—Plans and drawings together with careful estimates of the cost of the paving work planned for Poplar street have been completed by City Engineer J. W. Wilcox and are now in the hands of Alderman Hall of the Finance Committee and Chairman Wheeler of the special committee on paving; City Engineer Wilcox has also prepared a list of the special material that will be needed in the paving work; material will have to be purchased before the work can begin and will cost in round figures about five hundred dollars; as soon as the purchases are made the City Engineer will be able to begin the work and push it as rapidly as possible.

Valdosta, Ga.—City will issue \$50,000 bonds for paving sidewalks, extension of sewer and water mains.

Fort Wayne, Ind.—Notices have been sent to property owners affected of the proposed extension of Berry street, from Nelson to the entrance to Swinney Park; date for the hearing of objections and receiving remonstrances has been set for March 25; new street is to be in reality a boulevard and is the first step in a system of boulevards along the entire river front planned by the Park Board; plans have been ordered for the extension of River street northward to Lawton Park.

Fowler, Ind.—City is considering construction of 3 miles of streets; cost, \$30,000.

Indianapolis, Ind.—The Board of Public Works has ordered plans for cement walks on Lawrence and brick roadway in first alley north of Pratt street.

Marion, Ind.—Grand County Commissioners will soon receive bids for the construction of a boulevard from the city out to the Soldiers' Home; estimated cost, \$51,000.

Vincennes, Ind.—The County Commissioners have ordered bids advertised for the improvement of several roads.

Whiting, Ind.—City is considering the paving with brick or Westrumite of 117th street and White Oak avenue.

Davenport, Ia.—The paving program for the year was again extended at the regular Council meeting, when bids for six more streets were called for; list of those that it is proposed to pave is as follows: Sixth, Gaines, Eleventh, Ninth, alley between Front, Second, Scott and Western avenue; bids are to be opened on the 17th and the contract let.

Davenport, Ia.—Council has granted petition for the paving of Second street; also referred petitions for paving of Fillmore and Lilly streets.

Sioux City, Ia.—Council has ordered the City Engineer to draw up specifications for the paving of Vine street.

Sioux City, Ia.—The Street Committee has decided on the paving of 34 blocks, including paving with brick block from the end of the proposed Wall street viaduct to the stock yards, over Wall, Dace, Chambers and Leach streets, about 10 blocks; George street from West Seventh to Twenty-first street, asphalt; East Fourth street from the viaduct to Charles street, eight blocks; Court street from Fourteenth to Twenty-second street, either asphalt or creosoted blocks.

Hutchinson, Kan.—East A avenue will be widened to the full extent of the street, from the point where the creek jogs into the thoroughfare at the alleyway between Walnut street and Main street to the West side of Main street, according to the motion passed by Council; motion further read that, provided the Legislature gave monetary relief in allowing a bridge levy to be placed on the assessment roll, the bed of Cow Creek should be further covered to the alley west of Washington street; brick conduit, 8x4 feet, will be constructed to allow the water a runway; cost, about \$13,000.—T. G. Elbury, City Engineer.

Lawrence, Kan.—Council has ordered the grading and paving of Adams street.

Lawrence, Kan.—Council has ordered the paving of Berkeley street.—F. D. Brooks, City Clerk.

Topeka, Kan.—Property owners on Mulvane and Collena avenues have protested against the brick paving decided upon in their neighborhood and demand the new asphaltic plastic pavement, as is being pushed by local men.

Lexington, Ky.—The Board of Aldermen has passed an ordinance authorizing the Board of Public Works to advertise for bids to supply to the city 10,000 tons of crushed rock to be spread on the streets; Council has passed an ordinance authorizing the Board to advertise bids for oiling macadam streets.

Lexington, Ky.—A new plan is to be adopted by the Board of Public Works this year in the building of intersections of brick where a number of the streets cross Second street; first one to be built will be at the intersection of Market and Second; others will be at Upper and Second; Mill and Second, and Jefferson and Second; these will be paved in the near future; there will be a considerable amount of new macadamizing done generally in the outlying streets of the city. Reconstruction of macadamized streets will also be under way; Council has passed the ordinance authorizing the request of the Board of Public Works to purchase 10,000 tons of crushed rock for this work; also the purchase of 175,000 gallons of oil; the macadamized streets will be oiled in all portions of the city as long as the oil supply lasts.

Lafayette, La.—Council has ordered some 2½ miles of cement walks, including one or two sections previously ordered.

New Iberia, La.—Police Jury of Iberia is considering road improvements; plan has been submitted for 80-foot boulevard between New Iberia and Jeanerette; distance 12 miles.

New Orleans, La.—Council is considering the paving of Prytanla, Joseph and Hurst streets.

Baltimore, Md.—Nineteen streets in the Annex, provided they are shown to be public thoroughfares, will be paved this spring by the Annex Commission; paving will be done out of the last regular installment of \$500,000 from the \$2,000,000 Annex loan; there will be, however, for work in 1910, about \$100,000 left over from the unexpended balances of jobs that have been completed; streets of the Annex selected for paving this spring are: Augusta avenue, Loudon avenue, Brunswick street, Walrad avenue, Bellevue avenue, Penhurst avenue, Ridgewood avenue, Fourteenth street, Twelfth street, First avenue, Remington avenue, Thirtieth street, Huntingdon avenue, Twenty-ninth street, Fourth avenue, Chestnut avenue, Taylor street, Harrison street, Polk street.

Baltimore, Md.—Samuel C. Rowland, Vice-president of the International Trust Company, is the Chairman of the Committee appointed by the Merchants and Manufacturers' Association to appear before the Good Roads Commission and urge the selection of a road from Baltimore to Havre de Grace, across the Susquehanna,

to Perryville, to Northeast, to Elkton, to the Delaware State line, there to join the macadam road of Delaware.

Lawrence, Mass.—A movement is on foot among the Commissioners of Essex and Middlesex Counties to appear before the State Highway Commission to ask for permission to convert the proposed site for a boulevard between Lawrence and Lowell into a State Highway.

Malden, Mass.—Council has voted to appropriate \$36,000 for widening Main street, from the Odd Fellows' Bldg. to the block of the Caroline Richardson estate, Pleasant street.

Mattapoisett, Mass.—Town has appropriated \$800 to rebuild macadam on Main street; \$500 for repairs on Mattapoisett Neck road; \$200 for repairing sidewalks on Ned's Point road; \$300 to finish macadamizing of Foster street; \$500 to macadamize Acushnet road; \$500 for applications of Tarvia on highways of town; town will vote on \$400 appropriation for macadam on Pearl street; \$250 for repairs to road machinery; \$800 for macadam on Hammond street, and \$800 for macadam on County street.

Newburyport, Mass.—The Highway Committee has recommended that a new road roller be purchased at a cost of \$2,500.

Flint, Mich.—City will lay about 30,000 yards of pavement on business streets and 10,000 on residence streets; bids for a majority of the work will be asked in about a month.—C. I. Auten, City Engineer.

Lansing, Mich.—Bids will soon be received for paving Capitol avenue, four blocks, with a noiseless pavement, asphalt or equal; material to cost not over \$2.50 per square yard; also Cedar street, ½ mile, with brick; cost, \$2 per square yard.—H. A. Collar, City Engineer.

Nereson, Minn.—Bids will be received March 8, 3 p. m., for \$6,000 road bonds.—Hans Christensen, Town Clerk, Garland.

St. Paul, Minn.—The Macalester and Groveland Park Improvement Association is urging the macadamizing of Snelling avenue.

Gulfport, Miss.—At the meeting of Council an ordinance was adopted for the general grading of the Shell road on the beach and the laying of concrete sidewalks within the city limits.

Manchester, N. H.—Council has passed resolution appropriating \$13,000 for paving Notre Dame avenue.

Bayonne, N. J.—Council has received an ordinance for the repaving of Broadway with bitulithic; contract may be let in a week.

Bayonne, N. J.—Council has passed an ordinance for the improvement of Seventeenth, Nineteenth and Thirtieth streets.—W. C. Hamilton, City Clerk.

Long Branch, N. J.—A special committee and Mayor McFaddin have recommended that the question of providing a city asphalt plant be referred to the Street Committee and Mayor; also the macadamizing of Cedar avenue.

Paterson, N. J.—The Boards of Freeholders and Works have agreed on the widening of Spruce street; the County Engineer has prepared plans for a retaining wall that is to be constructed at the foot of the slide; Freeholders will build the retaining wall and the city will do the filling in, which would bring the street back to its old lines; bids will at once be advertised for the work and the job of building the retaining wall will be started as soon as possible; it is estimated that the wall will be finished about June 1, and that the filling in will take until October 1.

Perth Amboy, N. J.—Mayor Bollschweiler has recommended the repaving of Seventh street and the extension of Fayette street.

Plainfield, N. J.—Council has ordered the laying out and paving of West Fifth street.

Albany, N. Y.—Roadway between Engle and Swan streets will be paved; cost, \$20,000.—Walter Melius, City Engineer.

Gloversville, N. Y.—This city is considering laying of about 17,000 square yards brick paving on South Main street.—John F. Campbell, City Engineering.

Scotia, N. Y.—Village will establish a new highway from Washington avenue along the shores of Mohawk River.

Syracuse, N. Y.—City Engineer Henry C. Allen has submitted a number of estimates to the Common Council on local improvements recently ordered by the Aldermen and which will soon be advertised by the Board of Contract and Supply for bids; for the paving of Cortland avenue he estimated the cost at \$47,160 if sandstone block or creosoted wood block was used; \$34,200 if asphalt, vitrified brick or block, bitulithic or bituminous macadam was designated; \$41,030 if sandstone block or creosoted wood block was used with brick in the railroad strip, or \$30,470 if macadam was used with brick in the railroad strip; Orange street, from East Fayette to East Water street, with asphalt, vitrified brick or block, bitulithic or bituminous macadam was fixed at \$7,800; macadam pavement cost was fixed at \$6,200, and the use of sandstone or creosoted wood block was fixed at \$4,200.

soted wood block was fixed at \$10,000; same street, from East Adams to Croton street, the estimate for sandstone block or creosoted wood block was \$48,000; for asphalt, vitrified brick or block, bitulithic or bituminous macadam, \$34,600, and for macadam, \$26,400.

Troy, N. Y.—Residents of the Thirteenth Ward have started agitation for the paving of Park avenue from Seventh avenue to Cragin avenue.

Newbern, N. C.—City has sold \$50,000 municipal paving bonds to McDonald, McCoy & Co., of Chicago, Ill., at a premium of \$2,850.

Reidsville, N. C.—Bandy & Myers, Greensboro, have surveyed city prior to paving of streets and construction of sewer system; \$50,000 will be expended.

Washington, N. C.—City is considering a bond issue for sidewalks and street paving.

Akron, O.—When East Market street is repaved from High to Arlington streets a determined effort will be made to have the street widened six feet, three on each side.

Akron, O.—Council has ordered grade established on Marcy and Allyn streets.—D. W. Harter, Clerk.

Akron, O.—Citizens are urging the repaving of Mill street with Medina block stone; City Engineer Payne has estimated the property owners' share at \$7,181.81.

Ashland, O.—City will let contracts in a few weeks for the paving of two streets.—Edgar Koehl, Clerk.

Cincinnati, O.—At a meeting of Council a motion was submitted and referred as follows: Directing the Chief Engineer to prepare an approximate estimate of the cost of improving McLean avenue; also an estimate of the cost of improving Spring Grove avenue with granite; resolutions transmitted by the Board of Public Service were passed as follows: Declaring it to be necessary to improve West street with boulders; also Marion avenue with macadam; Broadwell avenue with macadam; also May street with wood blocks; the Board transmitted approximate estimates of the cost of improving certain streets, as follows: Clifford street, grading, constructing concrete steps and laying cement sidewalks, \$4,453.55; North Pearl street, with granite, \$13,584.40; Sixth street, with granite, \$20,490.70; Margaret street, grading, constructing concrete steps and laying cement sidewalks, \$1,734.30; Clinton Springs avenue, with wood blocks, \$13,494.90; Eastern avenue, with wood blocks, \$92,482.50; Van Hart street, grading, constructing concrete steps and laying cement sidewalks, \$1,923.10; also an ordinance, which was passed, appropriating \$12,000 for the purchase of materials for asphalt street repairs.

Dayton, O.—Street Superintendent Huffman is after more money for street repairing for the coming summer; he asks for an appropriation of \$15,000 for the repair of the gravel streets and \$25,000 for the asphalt streets.

Hamilton, O.—Council has received an ordinance instructing the City Civil Engineer to prepare plans and specifications for paving an alley between Third and Fourth streets with sheet asphalt; a petition has also been received asking that vitrified brick be used in paving South Fifth street.

Piqua, O.—Council has received petitions for the paving of High and Caldwell streets.

Ravenna, O.—City will ask bids in April for about two-thirds of a mile of brick paving.

Tiffin, O.—City is considering the following work: Paving with creosoted blocks Market street bridge, Washington street bridge; also laying three blocks of brick pavement on concrete foundation.—C. J. Peters, City Engineer.

Youngstown, O.—An election for a bond issue for improving roads will be held in Ellsworth township February 23; amount of the bonds which will be issued should the people vote favorably is not known, but it will be large enough to greatly improve most of the roads in that section.

Youngstown, O.—The East Federal Street Improvement Association has appointed a committee composed of R. Kurk, M. Obendorfer and H. Brockman to urge better streets.

Youngstown, O.—Council has authorized the paving of West Commerce street, Mahoning and Delano avenues.

Oklahoma City, Okla.—Council has ordered grading of about 70 blocks; cost between \$40,000 and \$50,000.

Sapulpa, Okla.—Representatives of brick, asphalt and wood block paving companies are in conference with officials relative to contemplated paving of 20 blocks of business streets.

Hazleton, Pa.—Council is considering the paving of Laurel and Deenwood streets.

Indiana, Pa.—Representatives of Indiana, Blair, Huntingdon, Perry, Milfin, Jamaica, Cambria and Westmoreland counties are considering means to further the construction of good roads.

Mt. Pleasant, Pa.—Town will issue \$18,000 bonds for street paving.

Philadelphia, Pa.—North Front street is to be opened at last; as agreed upon, the street will be opened through the new Municipal Hospital grounds, running from Nicetown lane to Luzerne street on the south side of the grounds and from Hunting Park avenue to the boulevard on the north side.

Scranton, Pa.—Council has received an ordinance authorizing the Mayor and the Board of Public Works to advertise for bids for the repair and maintenance of the thoroughfares of the city; also petitions for the paving of Scranton and Moosic streets.

Williamsport, Pa.—City is considering the resurfacing of about 20,000 square yards with asphalt.—Jas. F. Fisher, City Engineer.

Providence, R. I.—The first official step toward an easy approach to the East Side by highway or tunnel was made in the City Council when the City Solicitor was instructed to ask the General Assembly for permission to borrow not exceeding \$250,000 for the layout and extension of Waterman street from North Main to Canal street.

Providence, R. I.—The Executive Board of the Metropolitan Park Commission is considering the proposed boulevard which will extend along the bay shore from Watchemoket square to Pawtucket avenue.

Darlington, S. C.—Citizens are discussing the advisability of ordering an election at an early date to determine whether or not the town should issue necessary bonds for permanent street improvements.—Mr. D. C. McCall, Chairman; James P. Kilgo, Secretary.

Greenville, Tenn.—At a recent meeting of the new Board of Road Commissioners, E. C. Huffaker, of Chucky, was employed as engineer to lay off the roads through Greene County, to be worked during the coming spring and summer; of the road bonds authorized to be issued, \$50,000 have already been negotiated.

Knoxville, Tenn.—Alderman McMillan is urging the paving of Church, Patton and Main streets.

Memphis, Tenn.—Legislative Council has approved the proposed \$1,000,000 bond issue for street, sewer and bridge purposes.

Park City, Tenn.—The Street Committee of Council, of which W. H. Underwood is Chairman, has gone over the streets that are to be improved with the \$62,500 of bond money; Capt. W. C. Crozer, City Engineer accompanied the Committee; the work of surveying the streets has been begun, and soon the plan for all of the work will be ready for adoption by the Council; it is expected that before March 1 the contracts for the street work will be let; Jackson avenue, which is the main thoroughfare to the country through Park City, will require heavier work than any other street and more money has been promised for this street than any other; the suggestion is made by some of the property owners on streets where there are no street car tracks to have the curb lines 25 feet apart, thus reducing the cost of improvements and the amount of money to be raised under the abutting property plan; one of the amendments to the Park City charter, which has been prepared and which will in a few days be introduced in the Legislature by Representative E. M. Webb, is to provide for the application of the abutting property plan to Park City.

Brownwood, Tex.—Council has passed the sidewalk ordinance on its third reading, and it will go into effect as soon as it can be made a law; those who will first be asked to place walks in front of their property will be in or near the business part of the town.

Dallas, Tex.—The City Secretary has been instructed to advertise for bids for the removal of about 2,600 cubic yards of earth on Floyd and Oak streets.

Dallas, Tex.—Secretary James Fanning of the Park Board has been authorized to call for bids for the laying of a 5-foot concrete sidewalk with combination curbs and gutters about Central square, bounded by Oak, Flora and Swiss; also bids for the placing of 5-inch curbs of concrete along the main drives in City Park, to confine vehicles to the driveway; this will be approximately 5,500 feet of curbing.

Dallas, Tex.—The Board of Municipal Commissioners has ordered laying of about \$15,000 worth of sidewalks on South Harwood street.—D. F. Sullivan, Acting Mayor.

Fort Worth, Tex.—Council has passed the final order for the paving of Front street with bitulithic.

Fort Worth, Tex.—Final orders have been issued by the Commission for the paving of South Main, East Seventh, Rusk to Pecan and Pennsylvania avenue to Jennings avenue; paving of East Front will begin at once.

Paris, Tex.—The last issue of \$25,000 street improvement bonds has been shipped by express to the Chicago firm to whom they were awarded.

San Antonio, Tex.—Realizing that the rapid growth of the business center of the city demands a business street north and parallel to Houston street in order that the traffic may be controlled, Mayor Callaghan has in view the extension of Travis street to Soledad street.

Brigham, Utah.—Mayor Blackburn and Councilmen Glover and Horsley have been appointed as a Committee to confer with the County Commissioners in respect to making a good road through the watery lane.

Culpeper, Va.—Culpeper County Commissioners will build proposed 10 miles of macadam roads.

Danville, Va.—The Council Committee on Streets and Bridges has recommended that \$100,000 be appropriated for the purpose of paving West Main street and for the erection of a new iron bridge across the Dan River.

Dinwiddie, Va.—Citizens of Dinwiddie County have voted \$100,000 of bonds for improvement of main public roads.

Falls Church, Va.—Chairman Stewart of the Sidewalk Committee has recommended the construction of a concrete walk on Broad street a distance of 1,000 feet; also 800 feet on Maple avenue and 1,000 feet on Great Falls street.

Norfolk, Va.—Council has given first reading to report of the Finance Committee recommending and approving paving of Rose avenue from Willoughby to Hamlin with Belgian block and appropriating \$3,462; also report approving the recommendation of the Board of Control for an appropriation of \$4,428 for curbing and paving Reilly and Walke streets from Falkland to Wood street, and resolution for the purchase of a strip of land for the extension of Clay avenue from Queen street to Highland avenue.

Norfolk, Va.—Council has appropriated \$3,000 for guttering Eighteenth, Nineteenth, Twentieth and Twenty-first streets; also gave first reading to ordinances appropriating \$3,834 for improvement of May avenue; \$7,255 for repairing and rebuilding sidewalks; \$11,490 for improving Graydon avenue and authorizing issue of \$60,000 bonds for improvement of certain streets in the Sixth Ward; also referred the following to Finance Committee: appropriating \$3,502 for improvements in Blow street and \$1,554 for paving Manteo street; also report from the Public Improvement Committee for \$200,000 appropriation for systematic improvement of streets.

Petersburg, Va.—Council has received a resolution for the paving of Market street with granite block or vitrified brick.

Petersburg, Va.—Council is considering \$70,000 bond issue for street improvements.

Portsmouth, Va.—If the recommendation formulated by the Street Committee meets with Councilmanic approval, the sidewalk on the Waverly boulevard will be widened to 10 feet; Committee also recommended the curbing and guttering of London street, and at the same time recommended the paving of the sidewalk on street for 180 feet west of Dinwiddie.

La Crosse, Wis.—City Engineer Geo. P. Bradish has completed plans for 20,000 yards of brick paving and 34,000 yards of granite top macadam paving; cost, \$90,000.

Racine, Wis.—The Board of Public Works has been ordered to prepare plans for the improvement of Thurston avenue, Main, Sixth, East State and Monument streets.

BIDS RECEIVED AND CONTRACTS AWARDED

Birmingham, Ala.—The Street Committee of Council, February 3, awarded the contract to the Blane Paving Company, Chicago, Ill., for laying pavement along Twenty-sixth street from Highland to Madison avenues; the pavement will be of granitoid block.

Los Angeles, Cal.—The Pattillo Contracting Company has secured contract for paving portion of Sunset Boulevard with asphalt at 14½ cents per square foot, or a total of \$166,926.

San Bernardino, Cal.—Bids were opened for the machinery to be used in the municipal street repairing plant, but no contracts were awarded, the matter being turned over to the Street Committee and the Engineering Department; the bids submitted were: W. E. Baxter, 25-h.p. boiler on skids, \$537; George M. Cooley Company, oiling outfits, 16-gauge iron, \$900 for two; Petrolithic Paving Company, oiling outfits each, \$445; one tamping roller, \$762; Charles A. Baldwin, oiling outfit, each \$450; R. W. MacGillivray, street sweeper, \$341; oiling outfit, \$409.75; George A. Rogers, 25-h.p. boiler on wheels, \$750; on skids, \$635; one road roller, 10-ton Monarch, steam, \$3,050; road roller, 12-ton Universal, \$3,050; W. D. Anderson Company, 25-h.p. boiler and oiling outfits, \$1,285.50; Henshaw, Buckley & Company, 10-ton gasoline roller, American, \$3,300; 12-ton same, \$3,300; street

sweeper, \$369; one 25-h.p. boiler on skids, \$507; Kelly-Springfield Road Roller Company, 10-ton steam roller, \$3,150; 13-ton steam roller, \$3,250; 10-ton gasoline roller, \$3,300; L. A. Young Machinery Company, sweeper, \$375.

San Francisco, Cal.—The Board of Harbor Commissioners has accepted the proposal from the Healy-Tibbitts Construction Company to deliver 500 tons of rubble rock at 69½ cents per ton at the end of section 12 of the sea wall.

Tampa, Fla.—The Tampa Bay Land Company has awarded the contract to Cook & Keller, city, for two miles of paving at Palma Ceia Park; the paving is to be of shell with a 15-foot roadbed.

Princeton, Ill.—The Board of Local Improvements has awarded the contract for grading, draining and paving throughout Princeton to Keyes & McNamara, of La Salle, for \$35,196.

Fairmount, Ind.—The County Commissioners at Marion have awarded contracts for paving as follows: With Culver brick, Sycamore street, to Wm. Yates, for about \$16,000, and Mill street, with Marion block, to F. M. Benner, of Marion, for \$8,000.

Indianapolis, Ind.—The Board of Works received the following low bids: Thirtieth street, from Northwestern avenue to canal, asphalt roadway, Hoosier Construction Company, \$3.31; Lawrence street, from Thalmann avenue to Gertrude street, cement walks and graded lawns, William H. Holl, \$1.01; Boyd avenue, from Thalmann avenue to point 264.5 feet west of Thalmann avenue, cement walks and graded lawns, William H. Holl, \$1.09; Ruckle street, from Thirty-first to Thirty-second streets, cement walks, curbing and grading roadway, A. D. Bowen, \$2.33; Rural street, from Moore to Southeastern avenue, cement walks and curbing, Henry Maag, \$1.19; Gladstone avenue, from Washington to Michigan streets, asphalt roadway, brick gutters and curbing, California asphalt, Union Asphalt Construction Company, \$3.40; Trinidad asphalt, J. E. Sullivan, \$3.70; Bates street, from Noble street to State avenue, brick roadway; Lackey Brothers, \$2.62.

Laporte, Ind.—The County Commissioners, February 4, opened bids for macadamizing the Ginther and Small roads in Center Township; both contracts were awarded to W. B. Hutchinson, Michigan City, at \$15,640 and \$10,200, respectively.

Davenport, Ia.—The McCarthy Improvement Company have secured the contract for about 15,462 square yards asphalt paving at \$1.84 per square yard, and 4,535 square yards brick paving at \$1.50 and \$1.53 per square yard; bids opened February 2.

The bids follow:
Cedar street between Second and Third: McCarthy Improvement company, Excavating, 40 cents per cubic yard; brick paving, \$1.50 per square yard; curbing, 30 cents per linear foot. Britt & Layden, Excavating, 39 cents per cubic yard; brick paving, \$1.58 per square yard; curbing, 30 cents per linear foot. Independent Construction Company, Excavating, 40 cents per cubic yard; brick paving, \$1.62 per square yard; curbing, 33 cents per linear foot. Hydraulic Concrete Construction Company, Excavating, 38 cents per cubic yard; brick paving, \$1.57 per square yard; curbing, 34 cents per linear foot.

Harris street, between Rockingham road and Third: McCarthy Improvement Company, Excavating, 40 cents per cubic yard; brick paving, \$1.50 per square yard; curbing, 30 cents per linear foot. Britt & Layden, Excavating, 39 cents per cubic yard; brick paving, \$1.58 per square yard; curbing, 30 cents per linear foot. Independent Construction Company, Excavating, 40 cents per cubic yard; brick paving, \$1.62 per square yard; curbing, 33 cents per linear foot. Hydraulic Concrete Construction Company, Excavating, 37 cents per cubic yard; brick paving, \$1.56 per square yard; curbing, 34 cents per linear foot.

Twelfth street, between Main and Harrison: McCarthy Improvement Company, Excavating, 40 cents per cubic yard; brick paving, \$1.53 per square yard; curbing, 30 cents per linear foot. J. B. Frahm, Fuel and Construction Company, Excavating, 40 cents per cubic yard; brick paving, \$1.56 per square yard; curbing, 34 cents per linear foot. Britt & Layden, Excavating, 40 cents per cubic yard; brick paving, \$1.60 per square yard; curbing, 34 cents per linear foot. Independent Construction Company, Excavating, 40 cents per cubic yard; brick paving, \$1.61 per square yard; curbing, 32 cents per linear foot. Hydraulic Concrete Construction Company, Excavating, 35 cents per cubic yard; brick paving, \$1.60 per square yard; curbing, 34 cents per linear foot.

Dixwell street, between Howell and Pine: McCarthy Improvement Company, Excavating, 40 cents per cubic yard; asphalt paving, \$1.84 per square yard; combined curb and gutter, 66 cents per linear foot.

Lincoln Avenue, between Bowditch and

Second: McCarthy Improvement Company, Excavating, 40 cents per cubic yard; asphalt paving, \$1.84 per square yard; combined curb and gutter, 66 cents per linear foot.

Second street, between Harris and Lincoln avenue: McCarthy Improvement Company, Excavating, 40 cents per cubic yard; asphalt paving, \$1.84 per square yard; combined curb and gutter, 66 cents per linear foot.

For paving Tenth street, from Marquette street, 200 feet east, the Hydraulic Concrete Construction Company has been awarded contract, as follows: Excavating, 39 cents per cubic yard; brick paving, \$1.64 per square yard; curbing, 34 cents per linear foot. McCarthy Improvement Company bid for excavating, 40 cents per cubic yard; brick paving, \$1.70 per square yard; curbing, 30 cents per linear foot.

The Board of Public Works recommended that contract for permanent sidewalks in these districts be awarded the only bidder, Hydraulic Concrete Construction Company, but Council referred bids back to the Street Committee and Board of Public Works. The bids follow: First road district, brick walks, 10 cents per square foot; cement walks, 12 cents per square foot. Second road district, brick walks, 10 cents per square foot; cement walks, 11½ cents per square foot. Third road district, brick walks, 10 cents per square foot; cement walks, 12 cents per square foot.—Thomas Murray, City Engineer.

Indianola, Ia.—Bids were received and opened February 8 for (a) 15,390 square yards 3-inch creosoted wood block paving on a 5-inch concrete foundation, (b) 7,884 linear feet 6x20-inch concrete curb, and (c) 450 cubic yards extra grading, and the contract was awarded to the Kettle River Quarry Company, of Minneapolis, Minn., as follows: (a) \$2.61, (b) and (c) 35 cents. Other bids received were: Smith & Son, city, (a) \$2.82½, (b) 35 cents, (c) 40 cents; Harbin & Co., Iowa City, (a) \$2.69, (b) 35 cents, (c) 30 cents; Geo. M. King Construction Company, Des Moines, (a) \$2.68, (b) 38 cents, (c) 40 cents; J. J. Dunegan, Shenandoah, (a) \$2.66; (b) 40 cents, (c) 40 cents.—A. H. Gilliland, Engineer.

Shenandoah, Ia.—Council, February 3, awarded contract for paving with creosoted block about one mile on Maple and Elm streets, at \$2.65 per square yard, to the Kettle River Quarries Company, of Minneapolis, Minn.

Detroit, Mich.—The following proposals were received for furnishing the Department of Public Works with asphalt sand for the year ending January 31, 1910: Byron S. Aldrich, per cubic yard, 61½ cents; C. H. Little Company, 64 cents; Detroit Sand and Gravel Company, 70 cents; Byron S. Aldrich is the lowest bidder; The Department of Public Works has entered into contract with the said lowest bidder and

Moorhead, Minn.—James Kennedy, of Fargo, N. D., has secured the contract for about 23,000 square yards pavement, at \$2.52 per square yard for brick, or \$2.59 for creosoted wood block pavement; material not yet selected.—A. M. Hopeman, City Engineer.

St. Louis, Mo.—Contracts for street improvements calling for an expenditure of approximately \$80,000 were awarded by the Board of Public Improvements, February 3, as follows: Burd avenue, between Minerva avenue and Easton avenue, asphalt, the Parker Washington Company, \$13,446; Maryville avenue, between the United Railways Company's right-of-way and Maple avenue, asphalt, same, \$4,951; Michigan avenue between Miami street and Cherokee street, asphalt, Trinidad Asphalt Mfg. Company, \$15,355; Garfield avenue, between Clara avenue and Goodfellow avenue, bitulithic, Granite Bituminous Paving Company, \$13,078; Lucetia avenue, between Minerva avenue and Wells avenue, bitulithic, same, \$13,152; Rutger street, between Newstead avenue and Taylor avenue, same, \$7,556; McDonald avenue, between Grand avenue and Gustine avenue, bitulithic, same, \$21,031, and Smith street, between Wharf and Lewis streets, granite.

South Omaha, Neb.—Council has awarded the contract for grading, curbing and paving a portion of West L street to the National Construction Company, at \$33,718.

Brooklyn, N. Y.—Bids were received as follows, February 3, by Bird S. Coler, Borough President, for (a) regulating, grading, curbing and laying sidewalks on various streets and avenues, with all work incidental thereto; (b) regulating and paving with asphalt on a concrete foundation the roadway of various streets and avenues, with all work incidental thereto; (c) regulating, grading curbing and laying sidewalks on various streets and avenues, with all work incidental thereto: (a) O'Grady Brothers, 72 Eighth street, Brooklyn, \$2,103; Moran-Crowley Company, \$2,238; (b) Cranford Company, Fifty-second street, Brooklyn, \$24,153; Uvalde Asphalt Paving Company, \$23,213; Barber Asphalt Paving Com-

pany, \$24,294; Standard Asphalt and Rubber Company, \$25,575; (c) James Quinn Contracting Company, 36 Kenmore place, Brooklyn, \$11,195; Daniel Douglas, \$15,068; John M. Fox, \$12,465; National Cement Construction Company, \$12,480; P. T. McDermott, \$11,951.

Buffalo, N. Y.—Bids for macadamizing the Hamburg turnpike were opened February 4 by the Department of Public Works and Frank V. E. Bardol was the lowest bidder on the entire work at \$111,700; the other bidders were: H. P. Burgard Company, \$142,000; Thomas Brown Contracting Company, \$144,158; German Rock Asphalt and Cement Company, \$151,119; J. F. Stahell Company, \$250,072; William J. White, \$8,000; the Thomas Brown Contracting Company and William J. White bid on portions of the work; the paving is to be done for a distance of about 8,000 feet, or from the city ship canal to the city line, the width being 50 feet.—F. G. Ward, Commissioner.

New Brighton, S. I., N. Y.—Contracts have been awarded as follows for furnishing and delivering 1½ and ¾-inch broken stone and screenings of trap rock, or Staten Island syenite, in stone delivery districts, as follows: District 1, about 12,000 tons, to Clinton Point Stone Company, 115 Broadway, New York City, for \$16,200; District 2, about 8,000 tons, to Jos. Johnson's Sons, West New Brighton, for \$12,800, and District 3, about 12,500 tons, to Guinray Construction Co., Port Richmond, for \$21,875.

New York, N. Y.—Bids were received as follows, February 8, by John F. Ahearn, President Borough of Manhattan, for maintaining the asphalt pavement on the following streets where the original contracts have been abandoned. Borough of Manhattan: Twenty-seventh street, from Madison to Fifth avenue; Twenty-eighth street, from Eighth to Ninth avenue; Eighth avenue (Central Park West), from Fifty-ninth street to 110th street; First avenue, from Forty-ninth to Fifty-first street, from Fifty-fourth to Fifty-sixth street, from Sixtieth to Sixty-first street, from Seventy-second to Seventy-fourth street, from Eighty-third to Eighty-fourth street, from Eighty-fifth to Eighty-sixth street, from Ninety-first to Ninety-second street; Avenue D, from Houston to Eleventh street, Nineteenth street, from Sixth to Seventh avenue; Twentieth street, from Fourth avenue to Broadway; Twenty-ninth street, from Lexington to Fifth avenue; Clark street, from Broome to Spring street; Spring street, from Sullivan to Clark street; Spring street, from Hudson to Greenwich street; Twenty-first street, from Fourth to Fifth avenue; Twenty-second street from Sixth to Eighth avenue; Twenty-second street from First to Second avenue; Twenty-second street, from Eighth to Eleventh avenue; Park street, from Mott to Centre street; Baxter street, from Park Row to Grand street; Bayard street, from Baxter to Division street; Franklin street, from Baxter to Centre street; Hester street, from Bowery to Centre street; Mott street, from Park row to Broome street; Vulcanite Paving Company, 1170 Broadway, New York, \$24,004; Continental Asphalt Paving Company, \$35,264; Uvalde Asphalt & Rubber Company, \$32,719; Warren Asphalt Paving Company, \$36,067.

Bids were also received as follows for repairing and maintaining the sheet asphalt pavement in the Borough of Manhattan: Uvalde Asphalt Paving Company, \$155,400; Standard Asphalt & Rubber Company, \$212,640; Warren Asphalt Paving Company, \$209,420; Barber Asphalt Paving Company, 30 Church street, New York, \$133,560.

Bids were also received as follows for maintaining the asphalt pavement on the following streets: (a) Dutch street, from John to Fulton street; Pearl street, from Broad to Whitehall street; Forty-fifth street, from Sixth to Eighth avenue; Fourth street, from Lewis street to Second avenue; Third street, from Lewis street to second avenue; Lawrence street, from 126th street to Broadway; 126th street, from Lawrence street to St. Nicholas avenue; 129th street, from Broadway to Manhattan street; Sixth street, from Avenue B to Lewis street; Seventh street, from Avenue C to Lewis street; Sixtieth street, from First to Third avenue; Lewis street, from Houston street to south side of Third street; Lewis street, from 75 feet north of Fourth street to south side of Fifth street; Lewis street, from 30 feet north of Fifth street to Eighth street; Astor Place, from Broadway to Fourth avenue; Eighth street, from Broadway to Fourth avenue; 126th street, from Fourth to Fifth avenue; 126th street, from Seventh to St. Nicholas avenue; 130th street, from Fifth avenue to Lenox avenue; 130th street, from Seventh to Eighth avenue; First avenue, from Twentieth to Twenty-sixth street; First avenue, from Thirty-fifth street to Thirty-sixth street; First avenue, from Thirty-sixth to Forty-ninth street; First avenue, from Fifth to Fifty-fourth street;

First avenue, from Fifty-sixth to Sixtieth street; First avenue, from Sixty-first to Seventy-second street; First avenue, from Seventy-fourth to Eighty-third street; First avenue, from Eighty-fourth to Eighty-fifth street; First avenue, from Eighty-sixth to Ninety-first street; First avenue, from Ninety-second to 119th street; 120th street, from Fifth avenue to East River; Stuyvesant street, from Second to Third avenue; Ninth street, from Stuyvesant street to University Place; University Place, from south of Waverley Place to north side of Fourth street; Fourth street, from Broadway to Macdougall street; Waverley Place, from Broadway to Fifth avenue; Washington Place, from Broadway to University place; Mercer street, from Fourth to Fifth street; (b) Eightieth street, from Avenue A to First avenue; Fifth avenue, from Sixtieth to Eightieth street; Fifteenth street, from Second avenue to Irving Place; Fifteenth street, from Sixth to Tenth avenue; Fortieth street, from Eighth to Eleventh avenue; Forty-eighth street, from First to Lexington avenue; Fifty-first street, from First avenue to 88 feet east of Park avenue; Fifty-fourth street, from Lexington to Madison avenue; Fifty-eighth street, from Third to Lexington avenue; Macdougall street, from Spring street to Waverley Place; Pell street, from Bowery to Mott street; Pitt street, from Broome to Houston street; Sixty-first street, from First to Madison avenue; Sixty-eighth street, from First to Third avenue; Tenth street, from Stuyvesant street to Fifth avenue; Twelfth street, from Fifth to Sixth avenue; Thirty-first street, from Fourth to Fifth avenue; Waverley Place, from Fifth avenue to Macdougall street; Fifty-eighth street, from Seventh to Tenth avenue; Suffolk street, from Division to Houston street; Forty-fourth street, from Fifth to Sixth avenue; Forty-sixth street, from First to Fourth avenue; (a) Vulcanite Paving Company, 1170 Broadway, \$22,565; Uvalde Asphalt Paving Company, \$27,515; Standard Asphalt & Rubber Company, \$30,745; Warren Asphalt Paving Company, \$33,894; (b) Vulcanite Paving Company, 1170 Broadway, \$21,466; Continental Asphalt Paving Company, \$31,511; Uvalde Asphalt Paving Company, \$26,170; Standard Asphalt & Rubber Company, \$29,236; Warren Asphalt Paving Company, \$32,233.

Rochester, N. Y.—Bids were received as follows February 3 by the Board of Contract and Supply for asphalt repairs for 1909: Whitmore, Rauber & Vicinus, Rochester, \$34,389; Rochester Vulcanite Paving Company, \$34,494; F. C. Lauer & Sons Company, \$36,225.

Syracuse, N. Y.—The Board of Contract and Supply has awarded a contract to the Warner-Quinlan Asphalt Company for the resurfacing of South State street from Kennedy street to Colvin street with sheet asphalt; the amount of the contract was \$10,040.19.—Frederick T. Pierson, Secretary.

Graham, N. C.—Alamance County has awarded contract to T. D. Scruggs, of Durham, for grading roads in Alamance County; \$200,000 of bonds for construction of macadam roads have been voted.—Gilbert C. White, Durham, Engineer.

Hillsboro, N. C.—T. D. Scruggs, of Durham, has contract to grade macadam road to be constructed from Hillsboro to southern part of county; estimated total expenditure, \$25,000.—Gilbert C. White, Durham, Engineer.

Cleveland, O.—Bids were opened February 5 by the Board of Public Service for paving 52 streets, 50 of which will be brick and two of Medina sandstone, and the following are the lowest and successful bidders: Cleveland Trinidad Company, for 22 streets, about \$97,641; I. R. Bentley, 8 streets, a total of about \$28,231; Roehl Bros., for 14 streets, total about \$86,689; Northern Ohio Paving and Construction Company, for 6 streets, total \$51,427; Enterprise Paving and Construction Company, for one street, \$4,150; Standard Paving Company, one street, \$3,671, and Baldwin Bros., one street, \$1,676.—William J. Springborn, President of Board.

Cleveland, O.—The County Commissioners received bids January 30 for paving York Road for five miles, through Parma and Royalton Townships; the Enterprise Paving & Construction Company was low on brick, with stone curb, at \$108,800; W. S. Pace, Chicago, was low on brick, with cement curb, at \$109,213.

Bids were received February 3 for the paving of Columbia Road, west of the city, for a distance of six miles leading to Olmstead Village. The lowest bidders were E. A. Freshwater & Sons, at \$109,296 for brick, with concrete curb, and \$111,213 for brick, with stone curb.—W. F. Black, Clerk of Commissioners.

Greensburg, Pa.—R. D. Hunter and J. N. Hammond, of Beaver, have been awarded the contract for paving 4½ miles of brick road from Jeannette to Greensburg, in Westmoreland County; estimated cost, \$80,000.

Chattanooga, Tenn.—Southern Paving Construction Company, First National Bank Bldg., Chattanooga, is lowest bidder, at about \$26,000 for vitrified brick paving on East Main street from Rossville to East End avenue; about 12,000 square yards.—H. F. Van Dusen, Chairman, Board of Public Works.

Nashville, Tenn.—J. A. Webb, city, is the lowest bidder, at \$3,386, for grading, bedding and macadamizing Belmont avenue a distance of about 2,600 feet.—W. W. Southgate, City Engineer.

Dallas, Tex.—The contract for the paving of Annex avenue, from Bryan to Ross, was awarded to the Texas Bitulithic Paving Company on its bid of \$2.30 a square yard, with a five-year guarantee. There is to be a 5-inch gravel concrete base. Klein Bros. were awarded the contract for guttering and curbing at 60 cents a running foot. The other bid was of the Dallas Paving Company at 59 cents, but as the property owners petitioned the award to Klein Bros., and are to bear the expense of the work, the Commission so ordered.

The contract for heavy iron gratings and gutter covers for use on the Leonard street and Ross avenue intersection was awarded to the Mosher Manufacturing Company on its bid of \$165. The bid of \$140 from the Hardwicke Foundry & Machine Company was refused, because it was stated that the specifications were for too light a material.

Bellingham, Wash.—Charles E. Lind secured contracts for the improvement of Franklin street, from Elk to Maryland street, by clearing, grading, graveling and constructing cement sidewalks, at \$19,386.

Olympia, Wash.—The following bids were received by Council for paving a portion of Main street: Lester Construction Company, 613 St. Helens avenue, brick, \$2.90 per square yard; creosoted blocks, \$2.75; W. A. Weller, brick and creosoted block, \$2.84; F. A. Keasel, Provident Building, brick, \$2.94; W. J. Murphy, brick \$3.30, creosoted block \$2.95, and George Milton Savage, Bank Commerce Building, brick, \$2.90.

Seattle, Wash.—The following bids were received January 29 by the Board of Public Works for paving Fourth avenue and Fourth avenue South with vitrified brick: MacAdam & Co., Seattle, \$53,495; Coast Concrete Company, Pacific Block, Seattle, \$48,282; T. Ryan, Sullivan Block, Seattle, \$47,906 (awarded contract); Paul Steenstrup, Seattle, \$49,881; C. J. Erickson, 318 Columbia street, Seattle, \$51,638; Hans Peterson, Alaska Building, Seattle, \$51,868; Meacham & Babcock, Seattle, \$53,438; Sparger Concrete Company, Coleman Block, Seattle, \$48,936.—R. H. Thomson, City Engineer.

T. Ryan, Sullivan Block, has secured the contract for paving Fourth avenue. The details of the successful bid follow: Fixed estimate, \$1,300; clearing and grubbing, \$200; 1,540 cubic yards sub-grading, 60 cents; six catchbasins, single inlet, each, \$65; six catchbasins, double inlet, each, \$80; 258 linear feet of curb, curved granite, \$1.90; 3,403 linear feet curb, straight granite, \$1.55; 4,752 square yards concrete sidewalks, 97 cents; 8,005 square yards paving, vitrified brick, \$2.60; 273 linear foot wood stop, 40 cents; three new inlets, each, \$13; 10 man-holes, adjusted, each, \$3; 8,000 square yards 4-inch gravel base, 18 cents; 3,660 linear feet 3-inch tile drain, 10 cents; 374 linear feet 16-inch cast-iron pipe, class "B," \$4; 1,768 linear feet 16-inch cast-iron pipe, class "A," \$3.40; 325 linear feet 6-inch cast-iron pipe, class "A," \$1.10; 300 linear feet 8-inch cast-iron pipe, class "A," \$1.40; 12 birch gate chambers, each, \$40; 1,680 pounds special castings, 10 cents; 240 linear feet ¾-inch galvanized iron pipe, hydrant construction, 30 cents.

Contracts for concrete sidewalks on Bagley avenue have been awarded to Joe Frank for \$17,045.

Appleton, Wis.—Kumpfel & Bartz, city, secured the contract for paving Washington street with creosoted wood block on concrete foundation, about 11,000 square yards, at \$2.46 per square yard.—E. L. Williams, City Clerk.

Ellis Junction, Wis.—Alex. and William McGavock, of Beloit, have been awarded a contract to do the grading for a levee on both sides of the Peshtigo River for the Northern Hydro Electric Power Company, located 14 miles west of Ellis Junction. The job represents the handling of 150,000 yards of earth and will require the use of 50 teams all summer.

SEWERAGE

Sacramento, Cal.—The Board of City Trustees has adopted resolutions of intention and plans and specifications ordered for the following alley sewers: Thirtieth and Thirty-first, M and N; Twenty-first and Twenty-second, C and D; Ninth and Tenth, W and X.

South Pasadena, Cal.—City Engineer Dupuy and several of the City Trustees have made a tour of investigation of the broken

storm water drain which caused so much damage on Fair Oaks avenue during the recent storm; according to City Engineer Dupuy, the drain will have to be replaced with a larger one; present drain is but 12 inches and it ought to be twice as large in order to carry off the immense amount of storm water which flows off from Columbia street, where the drain starts; cost of putting in a new 24-inch drain will be about \$1,500.

Willows, Cal.—Bids will be received February 23 for \$10,000 sewer bonds.

Bridgeport, Conn.—At a conference with Mayor Lee, Engineer John M. Farley, of New York City, offered to devise an entirely new system for the disposal of the city's sewage, which he promised would be even superior to the Hering system and cost Bridgeport not more than \$300,000; the system proposed by Mr. Farley is for the construction of a disposal plant on the East Side and another in the West End.

Hartford, Conn.—Council has ordered public sewers constructed in Kenyon and Whitney streets.

Bartow, Fla.—Council has accepted plans of W. W. Lyon, Jacksonville, for sewer system.—E. M. Gibbons, Assistant Engineer.

Monroe, Ga.—City will install a sewer system.

Ottawa, Ill.—Council has adopted an ordinance from the Board of Local Improvements for the reconstruction of the sewer on Post street; ordinance provides that the old sewer shall be taken up and replaced with new sewer pipe; estimated cost, \$1,223.82.

Silvis, Ill.—Plans have been prepared by Engineer H. G. Paddock, Moline, Ill., for sewers.—Wm. Ireland, Clerk.

Fort Wayne, Ind.—The Board of Public Works has ordered plans for the construction of a sewer in Vermont avenue and in the alley between Crescent avenue and California street.—E. J. Lennon, Chairman.

Hammond, Ind.—City Engineer Lyons is preparing plans for extending the sewer on Columbia street to the river.

Indianapolis, Ind.—Charles A. Brown, Assistant City Engineer, is completing plans for sewers in Miller street, with branches, to cost \$35,000, and for sewers in Morris street, and branches, \$12,000.

Davenport, Ia.—Council has adopted a resolution asking that \$1,000 be set aside for a concrete sewer, 3 feet high and 2 feet wide, on Nineteenth street and First avenue.

Sioux City, Ia.—Street Commissioner Ford is of the opinion that sewers installed by the Traction company along the hill streets where the street car lines run, would prevent the collection of vast pools of water at the intersection with Fourth street in the business districts.

Sterling, Kan.—City will receive bids about April 1 for the construction of a sewer, including 6 and 12-inch tile sewer pipe, automatic flush tanks and septic tank filter bed.—G. L. McLane, Hutchinson, Engineer.

Franklin, Ky.—Bids will be received March 1 for \$20,000 sewer bonds.—P. E. Lewis, Chairman Committee.

Baltimore, Md.—Edward A. Preston, Building Inspector, and Calvin W. Hendrick, Chief Engineer of Sewer Commission, have agreed upon foundations for sewage pumping station on East Falls avenue; test piles will be sunk and put in solid foundations wherever possible; concrete piles to be driven as far as possible in places where solid foundation cannot otherwise be had.

Hagerstown, Md.—The Board of Street Commissioners is considering the laying out, straightening and condemning the Marsh Run for sanitary purposes.—Luther Peterman, Clerk.

Ann Arbor, Mich.—Bids will be received about March 1 for three miles of 8-10-inch tile sewer, with 20 flush tanks; plans prepared by City Engineer E. Groves.—Ross Granger, City Clerk.

Cadillac, Mich.—Council has received a petition for sewer in Farrar street.

Caro, Mich.—City is having surveys made for a sewerage system; cost, \$30,000.

Cheboygan, Mich.—City is considering extensive improvements and additions to the present sewer system.—George Case, City Clerk.

Detroit, Mich.—Commissioner of Parks and Boulevards F. D. C. Hinchman has asked for an appropriation of \$40,000 for a sewer system, including pumping station, for Belle Isle Park, declared necessary by the Health Department.

Flint, Mich.—City's sewer system is insufficient and a trunk line sewer about a mile long and of sufficient capacity to carry off two-thirds of the entire sewage of the city will be constructed.—C. I. Auten, City Engineer.

Lansing, Mich.—City will soon receive bids for constructing 3,000 feet of 8 to 20-inch tile sewers in Northeast Lansing.—H. A. Collar, City Engineer.

Manistee, Mich.—City will receive bids about March 1 for the construction of crock tile sewers; estimated cost, \$10,000.—James E. Craig, City Engineer.

River Rouge, Mich.—Council has decided to extend the sewer system to the Labadie, Nelman, Meyers and the Burke and Riopelle subdivisions.

Hazlehurst, Miss.—Council has closed a deal with the Board of Supervisors of this County, now in session, whereby the right to connect with the county sewer from the Court House was secured.

Meridian, Miss.—City will purchase 50 automatic flush tanks, assorted sizes.—W. G. Wetmore, City Engineer.

Butte, Mont.—City is considering the construction of a large outlet sewer this year.

Carlstadt, N. J.—Citizens have voted an \$80,000 bond issue for the construction of a sewerage system.

Millville, N. J.—At the meeting of Council an ordinance to erect a sewage disposal plant at a cost of \$25,000, in compliance with the demand of the State Board of Health, was passed.

Trenton, N. J.—Ordinance revising the present plan of sewerage in the lower end of the Sixth Ward has been passed; ordinances providing for the construction of sewers on Hillcrest and Paul avenues and Franklin and Adeline streets have been referred to the Ordinance Committee; City Clerk has been directed to advertise notice of intention to construct sewers on Ward, Cummings and Hamilton avenues.

Clovis, N. M.—Plans have been prepared by Engineers Burns & McDonnell, Kansas City, Mo., for a system of sewers.

Binghamton, N. Y.—City Engineer J. A. Giles has estimated the cost of constructing a sewage disposal plant at about \$200,000.

Brooklyn, N. Y.—The Joint Local Boards of Improvements are considering the proposed building of a big branch of the general system of relief sewers; plan provides for a branch sewer, beginning at Hewes street, on the Wallabout Canal, running to Classon avenue, to Park avenue, through the avenue from Classon avenue, to Skillman street, through to Myrtle avenue, thence along the avenue to Nostrand, thence to Vernon avenue, thence to Tompkins avenue, to Greene avenue, to unite with the beginning of Greene avenue sewer at Tompkins and Greene avenues, the scheme being to relieve the flooded district; Chief Engineer Fort, of the Sewer Bureau, Borough Engineer Creuzbaur.

Coney Island, N. Y.—A definite plan is now before the Board of Estimate for providing a drainage canal for the large district of lowland lying north of Coney Island; maps have been prepared by R. W. Creuzbaur, Consulting Engineer of the Department of Public Works for this borough, showing the lines of the proposed canal for a large section between Bensonhurst and Coney Island Creek and the Board of Estimate has initiated proceedings toward the acquirement of the property; plans are under way for like proceedings in connection with a larger drainage area lying to the eastward and extending to Coney Island avenue; this would be drained into an extension of the proposed Coney Island Drainage Canal, which would open it up to Sheephead Bay.

Huntington, L. I., N. Y.—I. R. Swezey, Jr., who has been canvassing that portion of this town which it is hoped to incorporate in a sewer district, has reported to the Committee of the Huntington Association having the matter in charge, and which is showing great interest in securing if possible a first-class system for disposing of sewage in this village.

Medina, N. Y.—Village has selected Chas. Ingersoll to prepare plans for the construction of a sewer system for the west side.—D. D. Holdredge, President Sewer Commissioners.

North Pelham, N. Y.—Town is considering construction of a \$25,000 sewage disposal plant.—H. A. Anderson, Town Clerk; H. B. Roberts, Engineer.

Syracuse, N. Y.—City Engineer H. C. Allen has submitted the following estimates for proposed sewer construction: Twelve-inch pipe sewer in Banana street, \$1,001; 12-inch pipe sewer in Bishop avenue, \$1,500; 8-inch pipe sewer in North Clinton street, \$7,500; 15, 12 and 8-inch pipe sewers in Kyle avenue, \$3,450.

Reidsville, N. C.—Bandy & Myers, Greensboro, N. C., have surveyed city and sewer system will be installed, and streets paved; bond election will be called; estimated expenditure, \$50,000; Bandy & Myers, Consulting Engineers, will have charge of design and construction when undertaken.

Akron, O.—City will probably have to rebuild the Sweetzer avenue storm sewer which for most of the distance is crushed and ruined.

Cincinnati, O.—At a meeting of Council motions were submitted and referred as follows: Directing the Chief Engineer to prepare approximate estimate of the cost of constructing a sewer, according to the

"amended plan," in Union avenue; also in Marion avenue and Isabella street; also directing the Chief Engineer to prepare and submit a plan for a sewer in Gay alley, in York street and in Elm alley.

Cleveland, O.—Burrowing 38 feet below the surface of the earth, the city will carry the new link in the East Side division of the intercepting sewer system beneath the foundations of buildings located in the heart of the great factory districts on the lake front; the Department hopes to be able to complete this section of the sewer system with funds now in hand; it is estimated that it will cost about \$320,000, and will be more than a mile and a half long, forming a connecting link between the section ending at Marquette avenue and the Gordon Park section; completion of this link will bring the downtown section of the great system into direct connection with the outlet in Collinwood.—City Engineer Estep.

Youngstown, O.—Council has received petitions for sewers in North Garland and Wick avenues.

Youngstown, O.—Council has passed ordinances for the construction of sewers in Hiram, Caledonian and Sherman streets; also Garland avenue.

Chandler, Okla.—Citizens will vote March 9 on \$25,000 bond issue for construction of sewer system.

Hartshorne, Okla.—A sewerage system will be installed from plans of the O'Neil Engineering Company, of Dallas; cost, about \$25,000.—I. D. Patterson, City Clerk.

McAlester, Okla.—Bids will be received March 1, noon, for \$263,000 sewer, city jail and water bonds.—J. M. Gannaway, City Clerk.

Allentown, Pa.—Indorsing plans approved by the State Department of Health, City Council has committed itself to a course which it is hoped will result in the early construction of a \$1,000,000 sewer system in Allentown; question of borrowing \$400,000 to build a disposal plant was referred to the citizens, to be voted on at the February election.—Hering & Fuller, Engineers.

Bradford, Pa.—City Engineer A. F. Bannon, Jr., is making a tour of inspection of sewage disposal plants, as the Board of Health has notified the city authorities that they must build one.

Du Bois, Pa.—Dr. D. F. A. Wheelock, State Sanitary Engineer, has recommended that some means be provided for storing water about the sewer outlet for flushing purposes.

McKeesport, Pa.—Councilmen of the Eighth, Ninth and Eleventh Wards are interested in plans for sanitary sewers for these districts that are being prepared by the City Engineer, the idea being to expend the \$140,000 procured through a bond issue some time ago for combination sanitary and surface drainage sewers, which idea was vetoed by the State Board of Health; Engineer has been asked to furnish plans showing how much territory can be supplied with sanitary sewers with the money at hand and an effort will likely be made to have ordinances calling for sanitary sewers passed; proposed sewers range from 15 to 24 inches and instead of building a sewer in Crooked Run and Sill avenue it is proposed to cover as much ground as possible in the districts named.

Meadville, Pa.—Property owners on East Pine street, outside of the city limits, have petitioned for sewer connections.

Scottsdale, Pa.—A stadia party from Connellsville is at present working upon the topographical features at Scottsdale for the comprehensive sewer plant required by the State Health Department.

Scranton, Pa.—Council has passed an ordinance for a sewer on Orchard street.

Mitchell, S. D.—Council has authorized the Sewer Committee to engage an engineer to prepare plans and specifications for the construction of sewers.

Chattanooga, Tenn.—The Board of Public Works will soon receive bids for laying sewer on Greenwood avenue.—H. F. Van Dusen, Chairman.

Columbia, Tenn.—Connor Akin, Civil Engineer, has presented a plan to the city for the sewerage of the town, and it looks now as if the city will have a new sewer system; Mr. Akin's report shows that by a very small cost Helm's Branch, which flows through nearly a central portion of the town, can be converted into a sewer.

Memphis, Tenn.—The Legislative Council has approved the proposed \$1,000,000 bond issue for street, sewer and bridge purposes.

Dallas, Tex.—The Board of Municipal Commissioners is considering a petition for a large sanitary sewer in Betterton circle.

Houston, Tex.—City will soon receive bids for installing a drainage sewer system and constructing sanitary sewers; cost, \$250,000 and \$225,000, respectively.

Mineral Wells, Tex.—City has decided to expend about \$15,000 in the construction of sewers.

San Angelo, Tex.—The San Angelo Sewer

Company is arranging to expend \$5,000 on improving the system; this will include the moving of their septic tank a mile further down the river, which will prove acceptable to patrons and the entire population of the city; company already has about \$20,000 invested and proposes to make it one of the best in any town in the State.

Norfolk, Va.—Council has appropriated \$2,055.50 for the drainage of Newton Creek; this includes the extension of Clay street and Tunstall avenue; also \$5,000 for sewer extension in the first six wards.

Richmond, Va.—Council is considering the issuance of from \$500,000 to \$1,000,000 of bonds for the construction of sewers; this will be included in the appropriation of \$2,747,486 for street and sewer work asked for by the Street Committee.—Charles E. Bolling, City Engineer.

Racine, Wis.—The Board of Public Works has prepared plans and specifications for rebuilding sewer in Marquette street; cost, \$1,971; also a public sewer in North Michigan street, \$1,578.50.—P. H. Connolly, Jas. Mutter and C. L. Crabb, Board of Public Works.

BIDS RECEIVED AND CONTRACTS AWARDED

San Francisco, Cal.—The Board of Public Works has awarded the contract for laying the southerly section of the East Potrero intercepting sewer to the Eureka Construction Company, at \$98,209.—Marsden Manson, City Engineer.

Cairo, Ill.—Garner & Hanes have been awarded the contract by the Board of Local Improvements, at \$17,170, for constructing vitrified tile pipe sewers in the Thirty-fourth street sewer district.

Ottawa, Ill.—The contract for the Fulton street sewer was awarded to J. J. Daugherty, of this city, his bid, \$2,997, being the lowest of the five presented. The other bids were Swartz & Oaks, \$3,049; W. J. Cebulski, \$3,250; P. N. Shippey, \$3,214; Caton Construction Company, \$3,214.

Davenport, Ia.—Bids for sewer construction have been received and contracts awarded as follows:

Sewer on Ripley street, between Eighth and Ninth: Christ Hansen, 89½ cents per linear foot; Patrick Connelly, 91 cents per linear foot; Independent Construction Company, 95 cents per linear foot; Hydraulic Concrete Construction Company, 88 cents per linear foot (awarded contract).

Sewer on Leclaire street, between Twelfth and alley between Thirteenth and Fourteenth: Christ Hansen, 94½ cents per linear foot; Patrick Connelly, 85 cents per linear foot (awarded contract); Independent Construction Company, 98½ cents per linear foot; Hydraulic Concrete Construction Company, \$1.14 per linear foot.—Thomas Murray, City Engineer.

Marion, Kan.—The Squire Electric & Construction Company, of Kansas City, Mo., has secured the contract for about 2¼ miles of main and lateral sewers in Sewer District 3 for \$7,514.—Thomas W. Brown, City Clerk.

Louisville, Ky.—Thirty-two bids were received by the Sewer Commission on four sections of the new sewer system; Coupe & Gray seemed to be the lowest bidders on all of the work, which will be let in separate contracts. The actual amount involved, however, will not be known for several days on account of the amount of detail work required in figuring out each bid. The several sections of the sewer on which proposals were made were as follows: Walnut street, between Eleventh and Thirteenth streets; Clay street, between Ormsby and Gwendolyn avenues; St. Xavier street, between Twenty-sixth and Twenty-ninth streets, and Walnut street, between Twentieth and Twenty-sixth streets. The bidders on the several contracts were as follows: Ferro Concrete Construction Company, Cincinnati; Burke & Mungovan, city; Scholtz & Vogt, city; L. R. Figg, city; Coupe & Gray, city; Fruin-Colman Construction Company, St. Louis; Paul & Kershner, Dayton, O.; M. O'Herron, Pittsburg, Pa.; C. T. McCracken, Columbus, O.; Henry Bickel, city; E. E. Peterson, city.

Detroit, Mich.—The following proposals for constructing vitrified crock lateral sewers were received:

No. 1967.—In alleys in block bounded by Leonard and Carter, Regular and Desmond avenues; also in block bounded by Carter and Artillery, Regular and Dix avenues, and in blocks bounded by Crawford and Artillery, Cartridge and Regular avenues; John S. Affeld, \$7,400; Langley & Jaynes, \$7,561; T. G. Whittaker, \$7,700; John Ginzal, \$7,537; William Porath, \$7,200; Ferdinand Porath, Jr., \$7,105; James Hanley, \$7,527; Jno. A. Mercier, \$6,990; Geo. W. Winterhalter, \$8,360; Jno. Jaynes, \$11,323; Jno. A. Mercier is the lowest bidder.

No. 1,983.—In alley in block bounded by Wilkie avenue and Govin street, Fulton and

Cottage Grove avenues: John S. Affeld, \$2,000; Langley & Jaynes, \$1,987; T. G. Whittaker, \$1,876; John Ginzle, \$1,253; William Porath, \$1,204; James Hanley, \$1,919; Geo. W. Winterhalter, \$2,100; William Porath is the lowest bidder.

No. 1,984—In alley in block bounded by Govin street and Springwells avenue, Fulton and Cottage Grove avenues: John S. Affeld, \$800; Langley & Jaynes, \$1,181; T. G. Whittaker, \$800; John Ginzle, \$660; William Porath, \$463; James Hanley, \$736; Geo. W. Winterhalter, \$1,000; John Jaynes, \$864; William Porath is the lowest bidder.

No. 1,985—In alley in block bounded by Waterloo street and Worcester place, Parker and Maxwell avenues, where not already built: John S. Affeld, \$700; Langley & Jaynes, \$787; T. G. Whittaker, \$676; John Ginzle, \$636; William Porath, \$748; James Hanley, \$663; Geo. W. Winterhalter, \$896; John Ginzle is the lowest bidder.

No. 1,987—In alleys in blocks bounded by Rademacher and Casgrain avenues, Fort street and Army avenue, and in right of way 139 feet north of north line of Fort street, from Waterman avenue to Rademacher avenue: John S. Affeld, \$2,200; Langley & Jaynes, \$1,987; T. G. Whittaker, \$2,188; John Ginzle, \$1,673; William Porath, \$1,938; James Hanley, \$1,958; Jno. A. Mercier, \$1,750; Geo. W. Winterhalter, \$2,530; John Jaynes, \$2,982; John Ginzle is the lowest bidder.

The Department of Public Works has entered into contract with the lowest bidder in each case.—J. J. Haarer, Commissioner.

Long Island City, L. I., N. Y.—Borough President Gresser received bids, February 8, for the construction of a sewer in the Ridgewood Heights and Evergreen section of the Second Ward. The sewer is to connect with the new St. Nicholas avenue sewer, and passing through Wyckoff avenue, it will accommodate one of the sections of the Borough of Queens that is growing very rapidly; six bids were received, of which the lowest was that of Charles Read, of Manhattan, \$5,635; the highest bid was \$11,000; the contract was awarded to Read.

New York, N. Y.—Contracts have been awarded as follows for sewers in Bronx Borough: Gunn Hill Road sewer to Jos. Burns, 147 W. 125th street, for \$13,228; Webster avenue sewer to McDonald & Barry, Webster and Tremont avenues, for \$275,278.

Niagara Falls, N. Y.—The Board of Public Works has awarded the contracts for the construction of the tunnel trunk sewer to Tierney & Horne, whose bid was \$65,517.10.

College Hill, O.—Walter S. Hollander has secured the contract for constructing sewers in several streets at the following bid: 500 cubic yards extra excavation, 50 cents; 100 cubic yards concrete, \$5; 1,000 linear feet 6-inch sewer pipe, 60 cents; 6,000 linear feet 8-inch sewer pipe, 90 cents; 13,000 linear feet 10-inch sewer pipe, \$1; 2,000 linear feet 12-inch sewer pipe, \$1; 5 tons iron pipe, \$80; 15 flusher machines, each, \$65; 50 oval manholes, each, \$20; 30 round manholes, each, \$35; 300 6x8-inch Y branches, 30 cents; 500 6x10-inch Y branches, 40 cents; 50 6x12-inch Y branches, 35 cents; total, \$25,992.

The lowest bid opened February 8 for a sewer in Fellis avenue was submitted by the Martin Construction Company, of Cincinnati, for \$7,475.—J. A. Stewart, Village Engineer, Traction Bldg., Cincinnati.

Portsmouth, O.—Samuel Monroe & Son, have been awarded contract for constructing sewers as follows: 235 cubic yards excavation at 20 cents; 350 feet 8-inch pipe laid, including 48 feet 4-inch pipe and 24 8x4 T's, at 25 cents; manhole, \$25; flush tank, \$60; totals of bids received, all bidders being residents of city: Samuel Monroe & Son, \$219.50; Samuel L. Rice, \$238.15; John A. Grimes, \$251; W. H. Hudson, \$249.75.—Martin W. McMahon, Clerk, Board of Public Service.

Warren, O.—The Service Board received bids for the Hall avenue sewer from four bidders; the bids of James McCracken is the lowest one; the figures of all bids follow: James McCracken, 1,248 feet 12-inch pipe, 39 cents; 41 Y branches, 45 cents; 4 manholes, \$23 each; 3 lamp holes, \$2.50 each; concrete, cubic yard, \$4; 41 wooden markers, 5 cents each; 624 jute gaskets, 5 cents each; rock excavation, 1 cent cubic foot; 10 feet running quicksand, 10 cents. George Dennis—Pipe, 50 cents; Y's, 50 cents; manholes, \$22; lamp holes, \$3; concrete, \$3; markers, 5 cents; gaskets, 5 cents; excavation, 1 cent; quicksand, 1 cent. James McGlashen—Pipe, 53 cents; Y's, 60 cents; manholes, \$25; lampholes, \$3; concrete, \$7; markers, 3.5 cents; gaskets, 3 cents; rock excavation, 20 cents; quicksand, 10 cents. F. C. Armstrong—Pipe, 58 cents; Y's, 67 cents; manholes, \$30; lamp holes, \$3; concrete, \$8; markers, 3.5 cents; gaskets, 4 cents; rock excavation, 40 cents; quicksand, 50 cents.

Knoxville, Tenn.—Jas. A. Hannifin was

awarded the contract to construct the 1,000 feet of lateral sanitary sewer on Wells avenue at a special meeting of the Board of Public Works, February 6; there were several bids presented, Mr. Hannifin's being the lowest; the bid was eight-inch pipe fifty-four Y's, \$1.30; manholes, \$20; lamp-holes, \$8.

Brady, Tex.—A. Lewis, of Comanche, was awarded the contract for putting in a concrete storm sewer from the Brady National Bank corner around the square, thence by the cotton yard to the creek, a distance of about 1,600 feet, for \$3,900; the sewer will be concrete, reinforced with steel, 3x4 feet half the distance, then 5x6 feet.

Dallas, Tex.—The Board of Municipal Commissioners, Acting Mayor Dan F. Sullivan, Chairman, has awarded contracts for the Deere Park sewer work on the following bids, the lowest in each case getting the contract:

Six-inch line in an alley between Lafayette and West Peak, Dallas Lime and Gravel Company, \$192; C. W. Olcott, \$215; Home Improvement Company, \$218.

Between Lafayette and Thomas, west of Peak, Dallas Lime and Gravel Company, \$179.50; C. W. Olcott, \$185.40; Dallas Home Improvement Company, \$198.

Between Lafayette and Thomas Peak and Carroll, Dallas Lime and Gravel Company, \$324.35; C. W. Olcott, \$326; Dallas Home Improvement Company, \$364.

Between Thomas and Deere, east of Milk, Dallas Lime and Gravel Company, \$152; C. W. Olcott, \$209.74; Dallas Home Improvement Company, \$211.20.

North of Thomas and west of Peak, Dallas Lime and Gravel Company, \$209; C. W. Olcott, \$213.20; Dallas Home Improvement Company, \$229.

North of Deere and east of Milk, Dallas Lime and Gravel Company, \$102.60; C. W. Olcott, \$118.75; Dallas Home Improvement Company, \$119.90.

North of Deere and west of Milk, Dallas Lime and Gravel Company, \$74; C. W. Olcott, \$77; Dallas Home Improvement Company, \$82.

South of Lafayette and east of Peak, C. W. Olcott, \$271; Dallas Lime and Gravel Company, \$272; Dallas Home Improvement Company, \$310.

For laying 6-inch sanitary sewers on Zang's Boulevard and an alley between Page and Brooklyn, west of Zang's Boulevard, the contract was awarded to the lowest bidder in the following: C. W. Olcott, \$257; Dallas Lime and Gravel Company, \$283; Dallas Home Improvement Company, \$317.

For the same work on Juliette, west of Washington, the same bidder was successful in the following: C. W. Olcott, \$227; Dallas Home Improvement Company, \$244; Dallas Lime and Gravel Company, \$259.

Seattle, Wash.—T. I. Peterson has secured the contract for constructing the Bagley avenue sewer for \$29,850.

Toronto, Ont., Can.—Bids were received February 2 for building Section 3 High Level Interceptor, including 1,975 feet 7½-foot, 2,419 feet 7¾-foot, 1,556 feet 8-foot, 439 feet 8½-foot; the prices for concrete ranged from \$19.97 to \$39.15 per linear foot; for brick the prices ranged from \$33.13 to \$46.73; contract not yet awarded.—A. C. D. Blanchard, Assistant Engineer.

WATER SUPPLY

Birmingham, Ala.—The Birmingham Water Works Company will soon construct the proposed stand-pipe on the top of Red Mountain to furnish water to South Highlands.

Mobile, Ala.—Bids will be received for furnishing and erecting 20,000-gallon cypress tank or bids for erecting tank furnished.—L. F. Bellington, Mobile Coca-Cola Bottling Company, Mobile, Ala.

Newton, Ala.—Citizens have voted \$8,000 bonds for water works; W. B. Mitchell, Mayor, has been authorized to proceed with plans for construction at early date.

Ft. Smith, Ark.—Mayor Bourland has recommended that an arrangement should be made with the Water Company in reference to an increase in the water supply.

Lake Village, Ark.—Bids will be received March 1 for \$25,000 water works bonds.—C. M. Matthews, Chairman Board of Improvement, District No. 4.

Greeley, Colo.—The Wildhorse Reservoir and Land Company has filed articles of incorporation; company will get water for its reservoir from Wildhorse Creek in eastern Weld County; capital, \$50,000.—L. C. Allen, A. D. Lewis and J. Wylie Anderson, Incorporators.

Jacksonville, Fla.—Council has passed a motion that the President appoint a Committee of three to confer with the Board of Bond Trustees relative to securing a lot for the purpose of erecting thereon a pumping station; pumping station will be located at some convenient site near the river in order to supply water through the new

16-inch water main on Bay street in case of fires.

Orange City, Fla.—Town will install a high-power gasoline engine and two pumps.

Quincy, Fla.—An election will soon be held to vote on \$75,000 bonds to extend water works and electric light plant and install sewerage system.—G. H. Palmer, City Engineer; G. W. Lamar, Jr., City Clerk.

McLeansboro, Ill.—Plans have been prepared for a 135,000-gallon reservoir; cost, \$25,000.

Newman, Ill.—An election will be held in the spring to vote on bonds for water works.—T. G. Todd, City Clerk.

Ottawa, Ill.—C. B. Hess has petitioned Council to extend water mains on East Main street to Green street.

Hazleton, Ind.—Town Council has taken final steps toward insuring the building of a water works system here; S. E. Cole & Co., of South Bend, will put in the plant and retain partial ownership in it; corporation of Hazleton will own \$5,000 worth of the stock in the new plant and have charge of its operation.

Shirley, Ind.—Plans and specifications for the new water plant have been completed; a tank of 50,000 gallons capacity on a 110-foot tower with a reserve basin of 120,000 gallons capacity will be installed.

Thorntown, Ind.—Bids are being received for furnishing material and constructing 8-inch tubular wells for the water works.—Chas. Brossman, Engineer, Union Trust Bldg., Indianapolis.

Charlotte, Ia.—Bonds, \$5,000, have been sold for the construction of water works.

Liberal, Kan.—Town is considering installation of a water works system.

Norton, Kan.—Citizens have voted \$18,000 bonds for water works extensions, and bids for material to consist of cast-iron pipe, valves and fire hydrants will be received March 1.—W. R. Tasker, Water Commissioner.

Baltimore, Md.—The Board of Estimates has granted Engineer Quick a \$4,000 appropriation with which to conduct immediate surveys incident to the data he is collecting for the consulting engineers on the proposed improvement of the city water supply under the \$5,000,000 loan; data that the consulting engineers have been particularly anxious to get concerns the topography of localities away from the site of the Warren Manufacturing Company; two surveying corps which Mr. Quick will put at once into the field will start operations on the Western run and the Gunpowder falls, both branches of the Gunpowder River above Warren; if feasible, the engineers will recommend another site for the reservoir as good as or better than Warren; such a recommendation, it is conceded, would be the simplest way out of the Warren deal, which, in the opinion of the Council Committee that investigated it, was at a price \$375,000 in excess of the maximum value of the property.

New Bedford, Mass.—The Water Board is considering the Mayor's recommendation for a general meter installation instead of the service supply as now in use.—J. E. Dionne, Temporary President.

Springfield, Mass.—City is considering construction of a reservoir on Rocky Mountain to be used in case of fire.

Battle Creek, Mich.—The Board of Control of the Battle Creek Industrial Association has passed resolutions requesting the Board of Public Works to purchase home-made pumps for the Gogwac Lake pumping station.

Flint, Mich.—City is considering either the installation of a filtering plant or the securing of wells with a sufficient capacity to furnish the city with water; recent attempts to sink wells have been failures.—C. I. Auten, City Engineer.

Gilbert, Minn.—The Steel Corporation is considering installation of a water works system and a fire department.

Jackson, Minn.—City has sold \$13,000 bonds for improvements to the water works, including a water tower and tank.—L. P. Wolff, St. Paul, Engineer.

Spooner, Minn.—Council is considering the construction of a water works system.

Charleston, Miss.—Council will issue \$20,000 bonds for the construction of water works.

Corinth, Miss.—City will issue \$8,000 bonds for water works and sewerage improvements and extensions.

Glendive, Mont.—City has rejected all bids for an additional boiler for the pumping plant.—Jens Rivenes, City Clerk; Loweth & Wolff, Consulting Engineers, St. Paul, Minn.

Stevensville, Mont.—J. H. Kyd, City Engineer of Butte, will soon visit this place to again look over grounds for a water works system; estimates have been furnished by Mr. Kyd and he is at present perfecting the plans.

Grand Island, Neb.—Town will enlarge the mains in the business district.

Arlington, N. J.—The North Arlington Council has rejected all bids which had

been received in the competition for the installation of water mains in the borough; Edward Sargent, of Kearny, was the lowest bidder; his price was \$20,855.

Barnard, N. J.—The Rochester and Lake Ontario Water Company has been petitioned to extend its mains on Dewey avenue.

Burlington, N. J.—The final report of State Topographer Verneule, Consulting Engineer of the city in its search for pure water, has been presented to city officials; expert has presented a plan whereby the city can procure from artesian sources a mile south of Burlington drinking water of the finest quality; plan also contemplates the saving of a substantial sum in the cost of operation; the expert rejects filtration of river water as too costly and unsatisfactory.

Newark, N. J.—Citizens are urging the installation of mains and better hydrant service in factory districts.

New Brunswick, N. J.—The Raritan Water Company, lately incorporated, has secured ownership of 70 acres of the pond at Runyon; company has also secured 300 acres of watershed in Madison and Sayreville townships; propositions will be made for the supply of water to South River, Sayreville, Old Bridge, Spotswood, Helmetta, and possibly Jamesburg.—Frank Bergen, of Elizabeth, W. H. Corbin and Isaac Van Houten, Incorporators.

Pedrickton, N. J.—The Township Committee has passed an ordinance granting the Pedrickton Water Company the power to lay mains and conduits about the town.

Trenton, N. J.—Council has received a communication from the Board of Water Commissioners, recommending that a tract of land lying above Trenton be acquired for the establishment of sedimentation basins; Finance Committee has been authorized to confer with the owners of such land with the idea of purchasing or condemning the same.—H. B. Salter, City Clerk; Abram Swan, Jr., City Engineer.

Clovis, N. M.—Plans have been prepared by Engineers Burns & McDonnell, Scarritt Building, Kansas City, Mo., for a \$125,000 system of water works, sewers and an electric light plant.—M. Boyle, City Clerk.

Canajoharie, N. Y.—Citizens have voted \$150,000 bonds for a new water system, using Spite Creek as the source.

Catskill, N. Y.—Plans and specifications have been completed by Knight & Hopkins, Engineers, Rome, N. Y., for the new water supply; plans include an intake dam on Potuck Creek, storage reservoir, and 8½ miles of vitrified and cast-iron pipe; estimated cost, \$152,000; an election will soon be held.

Coldspring Harbor, N. Y.—Town is considering installation of water supply for fire protection.

Dunkirk, N. Y.—The probability is that a water works plant will soon be installed at Findley Lake to supply water for fire protection and family use in the village; the Chautauqua County Board of Supervisors has adopted a resolution authorizing the village of Findley Lake to be set apart from the town of Mina as fire district No. 1.

Niagara Falls, N. Y.—Engineer Robbins has presented to the Water Commissioners an estimate of \$441 for an extension of a water main in Fifteenth street; Engineer has been directed to make an estimate for sewer and water on Highland avenue beyond the Carter Crume plant.

Niagara Falls, N. Y.—The taxpayers will vote, March 10, as to whether or not they will have a new water works system.

Rensselaer, N. Y.—The Rensselaer Water Company will let contract in April for the construction of a 5,500,000-gallon reservoir, probably of concrete construction, and also 4,000 feet of 12-inch main to connect with the present system.—R. L. Hinkley, Superintendent.

Forest City, N. C.—City will issue \$25,000 bonds to build a water works system.

Greensboro, N. C.—W. D. McAdoo will install a high-pressure water system for hotel.

Murphy, N. C.—J. B. Rider, C.E., of Richmond, Va., is interested in the installation of a water works system.

Fargo, N. D.—Council is again considering proposed new water works and the issuing of \$100,000 bonds.

Cambridge, O.—The State Board of Health has ordered the city authorities to take necessary measures to secure the introduction of a satisfactory water supply without delay.

Clarington, O.—Council has passed ordinances granting franchises to the Clarington Water and Electric Company to install a system.

East Liverpool, O.—Following the acceptance of Council's communication recommending mechanical filtration as the best means of obtaining a pure water supply for the city, the Service Board has agreed to instruct its Clerk to notify that body that the Board is ready to proceed with the erection of such a plant as soon as the necessary legislation can be prepared

authorizing them to go ahead; motion also provided that the Clerk communicate with Mr. Hill, the water works expert of Cincinnati, who drafted the plans in the hands of the Board for the proposed filtration plant, in order that he may lay the same before the State Board of Health for its approval; if the Board certifies that the plans and specifications are satisfactory, the Service Board directors can proceed to erect the plant without any fear of being held up by any legal procedure which might be invoked against them.

Euclid, O.—City will ask bids about July 1 for the construction of a water works system; cost, \$150,000.—F. A. Pease Engineering Company, Engineers, Cleveland.

Norwalk, O.—The Board of Public Service has authorized the Clerk and Water Works Superintendent to make out a list of the sizes of water meters required and get bids on 100 meters of different makes.

Rockford, O.—Village has issued \$9,000 bonds for the construction of a water works system.—Fred Feuchter, Village Clerk.

Steubenville, O.—The Citizens' Water and Light Company, of Follansbee, capitalized at \$50,000, of which Charles Crawford, cashier of the Citizens' National Bank of Follansbee, is President, will be represented at the next meeting of the Village Council, at which time their proposition to supply the town with a water works will be submitted.

Coweta, Okla.—City has selected A. Swanwick, Consulting Engineer, Joplin, Mo., to prepare plans for a water works system.

Coweta, Okla.—City has sold \$28,000 five-year 6 per cent. water works bonds to Uland Sutherland, Kansas City.

McAlester, Okla.—J. M. Gannaway, City Clerk, writes bids will be received March 1 for the purchase of \$175,000 to \$190,000 bonds; proceeds to be used to extend water mains and construct sanitary sewers.

Westville, Okla.—Citizens will vote March 6 on issuing water works bonds.

Drewsey, Ore.—Town will install a water works system.

Oregon City, Ore.—City will increase capacity of the water system one-half by installing new pumps and constructing a new reinforced concrete pumping station.

Mansfield, Pa.—Borough Council is considering purchase of the water plant.

Philadelphia, Pa.—City will soon be in the market for 8,500 tons of pipe, but it has not been decided whether steel or cast-iron will be purchased.

Dallas, Tex.—Thirty-two citizens of East Dallas, who are members of the East Dallas Heights Improvement League, have signed and filed with the City Secretary a petition to the Commission asking for the building of a water main on Forney avenue, from Armstrong to Fitzhugh, and on Fitzhugh to Grand.

Dallas, Tex.—The Water Department will lay an 8-inch water main in Jackson avenue.

Elgin, Tex.—Citizens have voted \$30,000 bonds for the construction of a water works.

Barre, Vt.—Nothing definite has yet been done toward constructing storage reservoirs; estimated cost, \$40,000.—Geo. R. Reed, City Engineer.

Sultan, Wash.—Proposed water works will be installed at a cost of \$15,000.—J. F. Borney, of Everett, Engineer; Thos. W. Musgrove, Town Clerk.

Clarksburg, W. Va.—The proposed bond issue for \$120,000 to improve and rebuild the water works of the city has been carried.

Fort Erie, Ont., Can.—Plans for the proposed water works have been prepared; these will be voted on at a special election on March 15; details of the estimated cost of water works installation include: Cast-iron pipe and connections, \$22,500; hydrants, etc., \$3,000; excavating, labor, etc., \$10,500; standpipe, \$7,000; pump house, \$1,200; pumping machinery, \$2,500; real estate and contingencies, \$3,000, making a total of \$50,000.

Winnipeg, Man., Can.—City Engineer H. N. Ruttan has recommended that the old softening plant at well No. 2 be rearranged to provide a capacity of 5,000,000 gallons; that a new plant with 5,000,000 gallons capacity be built at well No. 5, and that a third plant of 2,000,000 gallons capacity be located at well No. 6; estimated cost, \$150,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Richmond, Ky.—The Richmond Water & Light Company has let contract for the building of the new reservoir to Mason Hanger & Company, city.

Minneapolis, Minn.—The Massillon Iron & Steel Company has been awarded contract for 1,800 tons 6 to 24-inch cast-iron pipe at \$25.85.

The Camden Iron Works has contract for 100 DS. fire hydrants, 10 feet long, at \$41.75.

The Rensselaer Manufacturing Company has contract for 100 6-inch gate valves, 300 pounds pressure, at \$11.30; fifteen 8-inch, at \$17; twelve 12-inch, \$31.75, and two 24-inch, \$192.—Andrew Rinker, City Engineer.

Meridian, Miss.—Rubush-Dabbs Construction Company, city, has contract at \$12,000 to construct reinforced concrete settling basin and Platt Iron Works, Dayton, O., at about \$16,000, for force engine.—W. F. Wilcox, General Manager of Water Works.

Scranton, Miss.—The Chicago Bridge & Iron Works, Chicago, Ill., was awarded the contract, Feb. 2, by the city for the erection of a 75,000-gallon steel tank with a spherical bottom of a steel tower 100 feet high to balcony, at \$3,540; contract price does not include foundation.—W. G. Kirkpatrick, Jackson, Miss., Engineer.

Kansas City, Mo.—The U. S. Pipe Company has been awarded contract for 8,470 tons 6 to 48-inch cast-iron pipe at \$24.60.

Kansas City, Mo.—Bids were opened Feb. 4 by the Board of Fire and Water Commissioners for the construction of revetment work and a pile dike for the protection of the waterworks intake at Quindaro, Kan., and the contract was awarded to R. O. Shobe, of Chamois, Mo., at \$7.45 per linear foot for revetment work and \$9.70 per foot for diking.—S. J. Armstrong, Secretary.

Camden, N. J.—The Merchantville Water Company has signed a contract with George Pfeiffer, Jr., for the installation of a filtering process, an invention of Mr. Pfeiffer, which will eliminate to a large extent the iron in the water.

Camden, N. J.—The Water Committee of Council has decided to enter into a supplemental contract with Colonel George Pfeiffer to put in 15 more artesian wells at a cost of \$8,150 on the Hollinshead tract, near the Delair bridge.

Lyndhurst, N. J.—The Camden Iron Works, of Philadelphia, Pa., has secured the contract for water pipe, at \$5,339, and the Darling Pump & Mfg. Co., of Williamsport, Pa., for hydrants and valves, at \$976.—Robert M. Watson, Town Engineer, Rutherford.

North Arlington (Arlington Postoffice), N. J.—Edward Sargent, of Kearney, N. J., submitted the lowest bid on Feb. 3 to the Council for the construction of water works, at \$20,885. Other bidders were: United States Construction Co., \$24,254; Salmond Bros., \$21,517; John Doriety, \$26,435; D. Steffinelli, \$24,674; Dennis Dunn, \$26,844; Miele D. Bruno, \$24,128; McGay Engineering Co., \$25,079; Sergeant & Maxwell, \$25,177; all bids were rejected and new ones will be received March 3.—Wise & Watson, Rutherford, Consulting Engineers; H. C. Bayliss, Borough Clerk.

Pedricktown, N. J.—The Township Committee has decided to enter into a contract with the Pedricktown Water Company for fire protection of the town for a term of five years; an ordinance has also been passed granting the company the power to lay mains and conduits about the town.

South Orange, N. J.—The contract for laying water mains in Sherman place, Prospect street and Turrell avenue has been awarded to Ludwig Batt, of 224 Irvington avenue.

Minot, N. D.—The contract for the construction of a \$160,000 water works plant was let, Feb. 5, to James Kennedy, of Fargo, he being the lowest bidder; P. McDonnell was also one of the bidders.

Bryant, S. D.—Council has let the contract for a deep well with a capacity of 75,000 gallons per day, to Mr. White, Clear Lake, S. D., and M. Gossen, Rock Rapids, Ia., for \$4,000.

Saltsburg, Pa.—M. Bennett & Sons, of Indiana, have been awarded a contract for the construction of a water system at Avonmore, near here, to cost \$35,000.

Dallas, Tex.—The Crane Company's bid of \$25 for eighteen Mueller stop cocks was opened and referred to the Municipal Commissioners.

Seattle, Wash.—The Sparger Concrete Company has secured contract for water mains on Boren avenue, N., for \$10,749.

LIGHTING AND POWER

Lineville, Ala.—A plant for furnishing city with electric lighting will be installed by Dr. B. M. Smith.

Bakersfield, Cal.—The Kern Power, Transit and Light Company is considering plans for the doubling of the capacity of the power plant.

Long Beach, Cal.—The Edison Company is contemplating erecting a gas plant in that city which will serve nearly all Southern California; Engineer F. G. Jones, of San Francisco, with several engineers of the Edison Electric Company of Southern California, has reviewed the tide lands in the vicinity of the inner harbor with regard to a site for a million dollar distributing gas plant.

Oakland, Cal.—The Central Oakland Light and Power Company has been incorporated to develop and install plants for the distribution of electric current and water and

steam for light, heat and power for domestic and mechanical uses, and to supply electricity, water, steam, light and power for Oakland and other cities; capital, \$1,250,000.—A. M. Hunt, James Fisher, Berkeley; J. K. Moffitt, Oakland; M. S. Wilson, M. D. Levenson, F. G. Cartwright, C. N. Beal, San Francisco, Directors.

Ontario, Cal.—J. R. Anderson, of Pasadena, has secured franchises for a gas plant.—R. O. Brackenridge, Town Clerk.

Pasadena, Cal.—J. W. Burns, General Agent of the Pacific Light and Power Company, of Los Angeles, has offered the city ten arc lights to replace 43 incandescent lights; cost of making change, \$550.

Oxford, Ga.—The Central Power Company, of Macon, which is constructing a large dam near the lower edge of Newton County, preparatory to the erection of an immense electric power plant, will sell the two cities current for all their uses; if this is done, the Covington & Oxford Street Railway Company will be enabled to operate its cars by electricity.

Danville, Ill.—Engineer Frank Payne has made a survey of a site on the Vermillion River, where it is proposed to develop power.

Lovington, Ill.—Council has purchased the electric light plant of A. J. Lewis & Co. and will improve the same.

Oregon, Ill.—A. M. Seales, of Chicago, has purchased water power rights on Rock River at Oregon and will furnish electricity to Rochelle, Amboy, Sublette and Franklin Grove for commercial and street lighting.

Connersville, Ind.—W. W. McFarlan has asked Council for a franchise for the installing of a new electric light system in the city; a general franchise covering the whole city is desired; primary purpose of establishing the plant will be to supply lights for the large McFarlan Hotel Bldg.

Evansville, Ind.—Council has asked Mayor John W. Boehne to outline a plan showing them how the city can own and operate its own electric light and gas plant.

Indianapolis, Ind.—Sam'l. H. Chute Company will erect a light manufacturing plant on the East Side and an adjoining building to furnish heat, light and power for the manufacturing plant and for all buildings in the entire square bounded by Central and First avenues, N. E., Forty-fourth street and University avenue.—L. P. and F. B. Chute, Promoters.

Shoals, Ind.—Town Council has granted a franchise for an electric light plant to James F. Lynch, of Danville, Ind.

Cedar Rapids, Ia.—The Cedar Rapids & Iowa City Railway and Light Company has selected a site for a dam near the Fallsades, a point closer to both Iowa City and Cedar Rapids; it is planned to build a dam at this point for the development of power for the two cities, and it is probable that a dam will be constructed at Cedar Bluffs also.—W. G. Davis, General Manager, Cedar Rapids.

Farmington, Ia.—City is considering the installation of a larger dynamo at the municipal electric light plant.

Union, Ia.—The Union Electric Light Company will expend about \$6,000 in constructing an electric light plant.

Topeka, Kan.—On request of Council City Engineer Rogers has presented the first batch of equipment and construction plans for the new city electric light plant which will cost the city \$40,000 and will save that amount in a few years; equipment recommended by the City Engineer was: Generator, 400 direct, enclosed, outdoor arc lamps, \$19,400; one switchboard, one direct connected steam generator, \$1,050; 400 absolute cut-outs, \$1,390; 400 additional arc lamps, \$4,600; total, \$26,440.

New Orleans, La.—With a capital of \$500,000 the Gulf Coast Gas and Oil Company has been organized, with offices at Shreveport and Gibsland, La., to sink eight wells in Bossier, Webster, Blenville and Jackson parishes, La., where the company owns or controls by lease 50,000 acres; new company intends to construct a pipe line to New Orleans and supply natural gas for 80 cents, against \$1.15 now charged by the New Orleans Gas Light Company.—R. C. Mower, of Rockford, Ill., is among the organizers; others are S. R. Lippincott, of Shreveport; C. W. Hammer, Robert Colbert, A. J. Pennington, C. F. Petty and J. L. Dalton, of Gibsland; Drew Ferguson and A. R. Johnson, of Homer, La.

New Orleans, La.—Council has referred to the Fire and Lighting Committee an ordinance providing for plans and specifications for lighting fixtures for the City Hall Annex Building.

Eastport, Me.—Council is considering an application for a franchise for an electric light and power company.

Baltimore, Md.—Specifications have been approved for the Electrical Commission for general supplies for the year.

Fall River, Mass.—The Fall River Electric Light Company has applied to Council for permission to construct and maintain underground conduits on certain streets in the city.—A. H. Kimball, General Manager, Fall River.

Lowell, Mass.—Mayor Brown is planning for a great white way from the City Hall to the Middlesex street station by the way of Central, Merrimack and Middlesex streets.

North Adams, Mass.—R. L. Gardner, City Engineer, has recommended that all overhead wires be placed in underground conduits.

Detroit, Mich.—The Public Lighting Commission will require underground conduits for wires amounting to \$61,365.—F. T. Bowler, 40 Atwater street, Secretary.

Iron Mountain, Mich.—The Iron Mountain Electric Light and Power Company has purchased the water rights of Lower Twin Falls, on the Michigan side of the Menominee River and will commence work at once on development of the water power which, when completed, will supersede the present steam plant; it is proposed to develop about 500 horsepower.—George Irving, Iron Mountain, Manager.

Ironwood, Mich.—The Twin City General Electric Company will soon place contracts for material for the construction of a 7-mile extension from Ironwood to Bessemer; company is making plans to repair its transmission lines and install new machinery in its plant for one 150-kw., 2,300-volt, 3-phase generator; also one 200-h.p. alternating-current motor connected to direct-current generator will be installed immediately.—G. Beck, Superintendent.

Ramsey, Mich.—Plans have been completed for the installation of an electric light plant at the Eureka mine.—Chas. C. Jones, Superintendent.

Mt. Olive, Miss.—Houston & Cunningham, 705 Maison Blanche Bldg., New Orleans, have been selected to prepare plans for the construction of a \$7,000 electric light plant; bids for construction will be received in 30 days.

Millville, Minn.—S. D. Pierce and Edw. Dickman are considering the construction of a dam on Bumbro River for power and electric lighting purposes.

Macon, Mo.—City will receive bids in about two months for improvements to steam electric light plant, including installation of 300-horsepower engine, 125-horsepower tubular horizontal boiler, three-phase alternator from 200 to 250 kilowatt, centrifugal pumps, etc.; \$18,400 will be expended.—E. S. Bennett, Superintendent and Engineer.

St. Louis, Mo.—West End Light & Power Company will construct conduit on Grand avenue from Manchester avenue to Lucky street; estimated cost, \$80,000; plans have been completed for main underground conduit and will soon be ready for powerhouse.

Broken Bow, Neb.—An electric lighting plant may be established; A. J. Shaw, Superintendent of the electric light plant, Aurora, is interested.

Papillion, Neb.—Town is considering the construction of an electric light plant.

Wymore, Neb.—Citizens will vote on construction of an electric light plant.

Long Branch, N. J.—The Special Committee and Mayor McFaddin have recommended the installation of electric lights from Ocean avenue to Deal, and the providing of an underground conduit system.

Newark, N. J.—With the object of entering into a contract with the city similar to that governing the lighting of Broad street, south of Market, Moses Plant, President of the Broad Street Merchants' Improvement Association, and Joseph M. Byrne, the Secretary, have appeared before the Lighting Committee of the Board of Works; representatives of the improvers said that the merchants north of Market street desired Broad street, between Market street and Central avenue, lighted as brilliantly as South Broad street; their plans call for lights 100 feet apart and not 138 feet, as on Broad street, south of Market.

Newark, N. J.—To further the plans for obtaining more illumination in Broad street between Market street and Central avenue, and on Market street between the Court House and the Pennsylvania station, meetings of the Broad Street Improvement Association and the Market Street Business Men's Improvement Association will be held soon; at the Market Street organization meeting figures will be submitted regarding the cost of the proposed lighting per linear foot between the Court House and the station; Committees appointed to confer with the Public Service Corporation and Pennsylvania Railroad will report; at the Broad Street Association meeting the Executive Committee will report the cost of the lighting proposed, and it is expected that a definite plan for lighting the thoroughfare will be adopted.

Clovis, N. M.—Plans and specifications are being prepared by Engineers Burns & McDonnell, Kansas City, Mo., for an electric light plant.

Findley Lake, N. Y.—Town is considering construction of water works.

Charlotte, N. C.—The Charlotte Gas and Electric Co. has been incorporated with \$700,000 capital stock; will take over present gas and electric lighting systems.—E. D.

Latta, President and Treasurer; J. L. Chambers, Secretary.

Greensboro, N. C.—John A. Hodgins, J. S. Kuykendall, Secretary Chamber of Commerce, and B. T. Thyson, Civil Engineer, Roanoke, Va., are considering possibilities of developing water power of Deep River and transmitting electricity to Greensboro; distance, about 44 miles; 4,000 minimum horsepower will be transmitted to Greensboro.

Grand Forks, N. D.—The Street Lighting Committee of the Commercial Club, which, in conjunction with the Light Committee of Council, has been investigating the lighting of business streets by means of side lights on ornamental iron brackets and underground wires, has made its report; plans include the installing of one 100-kw. turbo generator, cost \$5,000; complete with switchboard in the present power house, together with a 150-h.p. boiler, \$3,500; 202 lamp posts will probably be needed; total cost of installation, basing estimate on the cost used in St. Paul, \$30,300.

Bucyrus, O.—The Board of Public Service has passed a resolution accepting the specifications drafted by a Committee, embracing the requirements to be met with in bidding on the street lighting contract for Bucyrus; specifications depart entirely from those under which former bids were received; they specify not less than 125 arc lights, but say nothing whatever concerning commercial lighting; under these specifications, a company or individual may bid for the street lighting alone but is not bound to furnish commercial light; the Board has decided to advertise at once and bids on the contract will be opened February 18; this procedure is distinct from any plan for a municipal plant.

Bucyrus, O.—City has sold \$40,000 bonds for constructing an electric light plant.—F. H. Froehlich, Engineer, 944 Ohio Bldg., Toledo, O.

Cincinnati, O.—Council has received a resolution providing for six more electric lights on Fifth street between Vine and Main streets.

Cleveland, O.—Council has adopted a resolution by Councilman Zinner that the Board of Public Service be instructed to investigate the question of having the Cleveland Electric Illuminating Company place underground conduits in Broadway S. E., between East Thirty-fourth street and Miles avenue.

Columbus, O.—Superintendent Herman Gamper, of the municipal light plant, has asked the Board of Public Service to purchase a new kw. turbo-generator; cost, \$45,000.

Warren, O.—The Illuminating Engineers of the National Electric Lamp Company have again conferred with the Board of Service, and it is now the plan to illuminate the business portion of the town as well as North Park avenue, as by this means one will get a fair showing of the worth of the Tungsten kind of street or sidewalk lighting.

Youngstown, O.—The East Federal Street Improvement Association is urging the better lighting of streets.—G. W. Gilgen, Temporary Secretary.

Minco, Okla.—Plans and specifications are being prepared by Engineers Burns & McDonnell, Kansas City, Mo., for an electric light plant.

Tonkawa, Okla.—Plans and specifications are being prepared by Engineers Burns & McDonnell, Kansas City, Mo., for an electric light plant.

Baker City, Ore.—Horace G. Burt, Ray Nye and R. B. Schneider, of Fremont, and several Omaha capitalists have taken over the electric light plant and now have complete control of this big enterprise; these men have natural water power at Sumpter which they will consolidate with the Baker City plant and use to furnish the electricity for their new plant; Frank Harmon will manage the plant.

Hazleton, Pa.—Council has ordered new lights placed at the following points: Elm street and Fillmore court, First street and Clinton court, Poplar and Maple streets, Eighth and Alter streets, Poplar and Mine streets, Pine and Mine streets.

Philadelphia, Pa.—Both Mayor Reyburn and Chief McLaughlin, of the Electrical Bureau, have been besieged by delegations to urge better lighting facilities for Walnut, Chestnut, Market and Arch streets.

Pittsburg, Pa.—The Kansas Natural Gas Company management will ask for authority for the construction of new pipe lines in Kansas to cost about \$1,000,000.

Reading, Pa.—Ordinances are pending in Councils providing for the granting of electric street lighting franchises to the Penn Electric, Manufacturers' Electric and the Reading-Edison Electric companies.

Jackson, Tenn.—Council has had a proposition from the Jackson Railway and Light Company to do the street lighting for the city; at present the city has its own plant in connection with the water works; Council did not accept the proposition; it is probable the city will put in a more up-to-

date plant than it now has and meet the increased demand for more lights.

Maryville, Tenn.—The plant belonging to the Rockford Electric Light Company which has been destroyed by fire will be rebuilt at once.—James L. Clark, Manager.

Fredericksburg, Va.—Judge A. T. Embrey has secured a charter for the proposed new power plant; Judge Embrey has announced that if the company putting up the plant can secure any kind of a reasonable franchise it will certainly be an established fact; an Association of Structural Engineers will build the plant, which will be able to furnish 10,000 kilowatts of power; a subsidiary concern will build somewhere in the city, or its vicinity, a plant which will take 5,000 kilowatts of the 10,000 to be distributed to individual subscribers; this power, of course, will be transferred by wire.

Olney, Va.—H. L. East has secured franchise and will install plant to furnish city with electric lighting.

Rocky Mountain, Va.—B. L. Fisher is promoting an electric light and power company; will install 75-horsepower engine, 56-kilowatt generator, etc.

Camas, Wash.—Council has granted two franchises to H. S. Parker for a telephone system for a period of 25 years, and to C. W. and G. W. Cottrell for an electric light system.

Fairmont, W. Va.—The Independent Light and Power Company has asked Council for a franchise to operate in this city; plant is to be in operation 17 months after the granting of the franchise.

Sparta, Wis.—Committee on Street Lighting has selected Jacob Cloos, Consulting Engineer, of Milwaukee, to advise as to the feasibility of installing a municipal lighting system.

Mexico City, Mex.—The Mexican Light and Power Company will increase its plant from 50,000 to 124,000 horsepower, and to accomplish this will construct about 20 miles of canals and tunnels to bring water into use from rivers now untouched.

Guanajuato, Mex.—The Guanajuato Light and Power Company will erect a hydro-electric plant at El Duro, which will have an output of 9,000 horsepower; plant when completed will give the company a total output of 20,000 horsepower.—Norman Rowe, General Manager.

Santa Rosalia, Mex.—The Compania Agricola y de Fuerza Electrica del Rio Conchos has been organized to construct a large hydro-electric plant and transmission system in the State of Chihuahua; it is planned to construct a dam across the Conchos River near the town of Santa Rosalia, State of Chihuahua; transmission lines will be erected to the cities of Chihuahua and Parral and to various mining camps, and to industrial centers within a radius of 175 miles.—Paul Ginther, President.

BIDS RECEIVED AND CONTRACTS AWARDED

Russellville, Ark.—The Russellville Water & Light Co., A. Brewster, Pine Bluff, Ark., President, will establish a plant to furnish Russellville with light and water and cities within radius of 50 miles with light; the company has taken over franchise of Russellville & Ozark Mountain Light & Transit Co. A light plant built by original company will be equipped with additional machinery, including one 150-kilowatt generator, to be used in conjunction with a 100-kilowatt machine now in service. Fred Wilson, of Pine Bluff, Ark., has contract for construction of power house and dam on Illinois River near Russellville, where there is a fall of 22 feet. The dam, when completed, will be 400 feet wide, with a 25-foot head of water. Four turbine wheels will develop about 500 horsepower. A reservoir will be built on top of a 168-foot hill from base of dam, and water will be pumped into the reservoir from the river below. It is estimated that \$50,000 will be cost of dam, race, power house and reservoir. Contracts for equipment of water-works system will be let during coming spring and summer.

Peoria, Ill.—A change of the power system from alternating to direct current on the Interurban line from Bloomington to Peoria and from Mackinaw to Springfield is to be made and will cost about \$200,000. Contracts for equipment and material have been let to the General Electric Co., of Schenectady, N. Y., and probably are all signed by this time. To make this change new and heavier copper will have to be used the entire distance, about 100 miles. The cost of this wire is \$101,000. The Illinois Traction System will furnish the labor to install the new work. H. E. Chubbuck, General Manager, plans to have this change made by the first of July. Eight sub-stations will be set up. The equipments now on twenty cars will have to be changed. The General Electric Co. will take the old machinery. It will also furnish new car equipments.

Fort Wayne, Ind.—The Committee on Contracts and Franchises, to whom was referred a contract entered into between the Board of Public Works and the Electric Works, for purchase of 85-horsepower motor, for \$885, after an investigation recommended its passage, and it was concurred in.—Wm. A. Bayer, Marion B. Johnson, James M. Henry, Philip H. Wyss, Committee on Contracts and Franchises.

Kansas City, Mo.—The County Commissioners have awarded contract for power house laundry and smokestack at poor farm to Yetter & Kleinhoffer, for about \$19,000.

St. Louis, Mo.—The Sunlight Street Lighting Company, of Pittsburg, Pa., submitted the lowest of the bids received Feb. 5 for the ten-year contract, beginning Dec. 1, 1910, for lighting the residence district with gas incandescent lamps. Its bid was \$5.50 for 1,000 mantle lamp hours. This will make the total for the ten years \$4,961,000. The Welsbach Street Lighting Co., which holds the present contract, was the next lowest bidder, with an offer to furnish the light at \$5.62 for 1,000 lamp hours, which would make the total cost for the ten years \$4,968,162. The American Street Lighting Co., of Baltimore, submitted a bid of \$6.50.

Bids were also opened for furnishing electric lighting for certain public buildings, lighting of streets and public squares, etc., for a period of 10 years, approximately 1,196 arc electric lamps to be in use by September 1, 1910, and 1,003 incandescent electric lamps, and the lowest bid was that of the Union Electric Company, of St. Louis.

The Board of Public Improvements has approved the bid of the Union Electric Company for lighting public buildings, in two 10-year contracts, one north and one south of Washington avenue, at 3¢ cents per kw. of 1,000 watt-hours, the contract to become effective September 1, 1910.

Buffalo, N. Y.—The bids received by the State Lunacy Commission on Feb. 3 for furnishing and installing engine and dynamo at the Buffalo State Hospital were: Fort Wayne Electric Works, Syracuse, N. Y., \$6,245; E. G. Barnard Co., Troy, N. Y., \$7,668; Sacket Electric Construction Co., Buffalo, N. Y., \$6,179; alternate bids: Ridge-way engine, \$5,978; Skinner engine, \$6,125; Ames engine, \$6,200; John W. Danforth Co., Buffalo, N. Y., \$5,795; Buffalo Electric Contracting Co., Buffalo, N. Y., \$5,500; Ridge-way engine, \$5,640; J. C. Stearns Electric Co., Buffalo, N. Y., \$5,300; the G. & W. Mfg. Co., New York, \$6,300; Wheeler-Green Electric Co., Buffalo, N. Y., \$6,100; Engineering Service Co., New York, \$5,847; McCarthy Bros. & Ford Co., Buffalo, N. Y., \$5,750; Frost & Sheldon, Albany, N. Y., \$7,100; John P. Kelley, Schenectady, N. Y., \$5,850; T. E. McGarr is Secretary; F. B. Ware is State Architect, both at Albany.

Wappinger Falls, N. Y.—We are informed that the contract for an extension to the electric light plant has been awarded to Stehlin-Miller Co., Forty-first street and Park avenue, New York City, for \$9,150.

Columbus Barracks, O.—Bids were opened as follows February 8 by Capt. H. J. Hirsch, Construction Quarter Master, for furnishing and installing transformer, etc., and making underground electric service connections to new post hospital, etc.; Jas. Ferry & Sons, Charleston, W. Va., \$4,985, and Newark Electric Company, Newark, O., \$5,792.

Philo, O.—The contract for construction of the power plant of the Center Valley Light & Power Co. on the site of the William Frazier mill at Philo, has been let to A. W. McDonald, of Steubenville, O. The cost is \$260,000; work will be begun at once and will be in charge of F. W. Wetherall, Engineer. Two buildings will be erected, according to the plans of the company. One of these buildings will be 100x100 feet and will be the main generating plant. Another building, to be used as an auxiliary will be 100x75 feet. These plants will be so equipped that 2,800 horsepower may be developed. Four double turbines will be installed, and the motive power will be steam and water. The water power will be secured from the old mill race. It is proposed to furnish electric light to the villages of Philo and Duncan Falls.

Courtdale, Pa.—The Luzerne County Gas and Electric Company has been awarded contract for lighting the public streets of the borough for a period of ten years, commencing March 1; the company is to furnish six or more enclosed electric arc lights for \$70 per arc lamp per annum and eight 50-candlepower incandescent lamps for \$180 per annum and any additional arc lights that may be ordered shall be furnished at \$70 per lamp of 2,000 candlepower per annum and any additional incandescent lamps of fifty candlepower at \$30 per incandescent lamp per annum.—George W. Williams, Burgess of Borough.

Steelton, Pa.—President Reynnders, for the Finance Committee, reported, Feb. 8, to the Borough Council that the Committee had met representatives from the Paxtang Electric Company and the Steelton Light, Heat and Power Company and had decided

to recommend that a contract for street lighting be negotiated embodying several new features; the new contract will be for five years, with the privilege of five annual renewals, the successful bidder must agree not to increase domestic and commercial rates, power must be furnished the pumping station and the filter plant at seven and one-half cents per kilowatt hour; practically all the old features of the previous contracts were retained, but the committee would not recommend the award to either company. Mr. Gerdes then moved that the contract be given to the Steelton Light, Heat and Power Company by the town Property Committee. C. W. Lynch, of the Paxtang Electric Company, was given the floor and thanked the Council for the attention shown him, but said that he did not think that Council had treated his company or their constituents fairly, as they would have saved over \$7,000 by accepting his company's bid. Dr. Saul said that he thought Council had been fair, the Paxtang Company not having a franchise. Mr. Keeney, of the Steelton company, said on being questioned, that his firm was willing to reduce the price of incandescent street lights from \$30 to \$25 per year. There are five of these lights in town. The motion made by Mr. Gerdes was then voted on, the Steelton Company being awarded the bid without a dissenting vote.

Campbellford, Ont., Can.—The Seymour Power & Electric Co., Ltd., is placing contracts for the construction of a power house at Campbellford, Ont.; the powerhouse, when complete, will develop 4,000 horsepower, and contracts for the more important machinery have already been made with the Canadian Westinghouse Mfg. Co., the Canadian General Electric Co., William Kennedy & Sons, and the General Electric Company.

FIRE EQUIPMENT

San Francisco, Cal.—The Fire Commissioners have decided to request the Board of Supervisors to provide funds for the purchase of apparatus to be used in connection with the high-pressure water system, including three hose wagons, two batteries, 7,000 feet of 3-inch hose and 20,000 feet of 3½-inch hose.

Washington, D. C.—Senator Scott, a member of the District of Columbia Committee, has presented an amendment which he intends to propose to the general deficiency appropriation bill, appropriating \$8,400 for equipping suburban schools in the District of Columbia with stationary chemical fire extinguishers.

Jacksonville, Fla.—Council is still considering matter of purchasing a site and erecting a new fire station.

Augusta, Ga.—City is considering purchase of an auto combination hose and chemical wagon for No. 4 Company; a new engine and hose wagon will also be purchased, all ball-bearing wheels and rubber tires for all apparatus.—Chief Reynolds.

Rexburg, Ida.—Council is considering the erection of a City Hall and fire station to cost about \$1,800.

East Moline, Ill.—Council has instructed the Building and Grounds Committee to secure a place for keeping the apparatus of the Volunteer Fire Department.

Silvis, Ill.—Village is considering the purchase of 1,000 feet of hose and other minor equipment.—Mr. Walsh, President Fire Board.

Evansville, Ind.—Chief Dunlevy has estimated cost of an entire new fire alarm equipment for the central station at \$6,500; this includes a storage battery and a new set of repeaters.

Mishawaka, Ind.—City is urging the erection and equipping of a hose house on the North Side.

Oelwein, Ia.—Architect Harry G. Netcott, Independence, Ia., has prepared plans for a fire station.—C. O. Shippy, City Clerk.

Sioux City, Ia.—City Clerk A. A. Smith has been ordered to advertise bids for 2,000 feet of hose for the Fire Department.

Lexington, Ky.—The Light and Water Committee is considering a proposition to provide fire protection for the Lexington Motor Car Company's new plant, which is to be built on the Leestown pike near the city limits.

Thibodaux, La.—Company No. 1 will purchase a combined chemical and ladder truck.

Baltimore, Md.—Building Inspector Preston has approved specifications for the new water tower house to be erected on South Gay street, adjoining No. 1 truck house.

Helena, Md.—Citizens are urging the securing of better fire protection.

Lynn, Mass.—The Board of Aldermen has adopted an ordinance to have the Finance Committee incorporate in the appropriation bill \$12,000 for a fire station on Cashen avenue.

Marlboro, Mass.—City will secure 1,000 feet of hose; individual tappers for the alarm system; two alarm boxes, 2½-inch rubber tires for two wagons; Seagrave lad-

ders, and a modern Seagrave truck.—Chief Andrews.

New Bedford, Mass.—Chief Dahill, in addition to recommending the installation of a combination pump and hose wagon at the Head of the River, has also recommended that the Board take under advisement and the substitution for them of the horse-driven steamers in the department and the substitution for them of automobile pumps; the Chief thought that a good opportunity was offered at present for a start, inasmuch as the State inspectors have condemned engine No. 4 and before this apparatus will be serviceable again an entire new boiler will have to be installed.

Gilbert, Minn.—The Steel Corporation will install a fire department and a water works system.

Raymond, Minn.—Town will purchase new apparatus.

Clarksdale, Miss.—City is considering the erection of a new fire station.—M. W. Purnell, City Clerk.

Omaha, Neb.—A site at Twenty-second street and Ames avenue will be purchased for the erection of a fire engine house.

Manchester, N. H.—Council has passed ordinances appropriating \$650 to install fire escapes on City Hall and Battery buildings; also \$500 for a fire alarm shocker on the tower of the Amoskeag schoolhouse.

Hoboken, N. J.—City is considering purchase of a new first-size engine, combination chemical engines and hose wagons for three companies; scaling ladders and life belts for three companies; fire alarm boxes with auxiliary connections in each school, and smoke helmets for each truck company and one for the chemical engine company.—Michael Dunn, Chief.

Long Branch, N. J.—Chief William Moore has submitted a list of supplies needed by the Fire Department; referred to the Fire and Water Committee.

Trenton, N. J.—Chief Allen is urging the installation of a truck company in vicinity of East State street and Olden avenue.

Watervliet, N. J.—Town needs a new chemical hose wagon and new steamers.

West New York, N. J.—Town will purchase about 2,000 feet of hose for Farragut Place.—Mayor Darling.

Binghamton, N. Y.—Laurel Hose Company is considering purchase of an auto.

Blossom, N. Y.—Architect Frank M. Shurman, Buffalo, has prepared plans for a \$4,500 addition to fire house.

Elmira, N. Y.—Mayor Sheehan and Council Committee have not yet reached a decision as to the location of the new fire station in the Seventh Ward.

Poughkeepsie, N. Y.—The Committee on Public Property has recommended the purchase of a site for the new home of the Niagara Steamer Company; also reported that \$1,000 will be needed to repair the upper floor of the new Booth Hose House; the Chamberlain will advertise for bids for furnishing 1,000 feet of hose; preference given to local dealers.

Syracuse, N. Y.—Authority to issue bonds to the amount of \$85,000 will be asked of the Common Council by Commissioner of Public Safety Harlow C. Clark within a fortnight for the purpose of improving the fire and police alarm telegraph systems of the city.

Crestline, O.—Funds have been secured for the purchase of new apparatus.

Hamilton, O.—Council has received an ordinance to issue \$20,000 bonds for the purpose of securing the real estate and erecting, equipping and furnishing a new engine house in Lindenwald.

Springfield, O.—E. A. Richards has recommended the rebuilding of aerial truck, automatic sprinklers in all large buildings and make central house a three company one.

Youngstown, O.—Council has ordered the Directors of Public Safety to prepare specifications and advertise bids for an automobile fire engine.

Greenburg, Pa.—Residents on Academy Hill will organize and equip a fire company.

Hazleton, Pa.—Ordinances authorizing the purchase of rubber coats for the Pioneer Company, also authorizing the City Engineer to prepare specifications and advertise bids for the extension of the present fire alarm system are being considered by Council.

Jenkintown, Pa.—Funds are being raised for the purchase of an automobile chemical engine for the Pioneer Fire Company.

North Scranton, Pa.—The North Scranton Board of Trade is urging the purchase of a site at West Market street and Wayne avenue for a home for Hose Company No. 1.—F. V. Hartzell, President.

Scranton, Pa.—Council has passed a bond measure calling for \$14,000 for the new fire houses in the Fifteenth and Seventh Wards.

South Canonsburg, Pa.—Council has decided to purchase some minor equipment for Company No. 2, including a spraying nozzle.

Salt Lake City, Utah.—The Fire and Police Committee of Council has decided that a recommendation should go to the Council that a new fire station be established in the southwestern portion of the city; the report of the Committee will recommend before any details be taken up that \$200 be appropriated for plans.

Salt Lake City, Utah.—City is considering purchase of a water tower.

Richmond, Va.—The Board of Fire Commissioners is considering a bill asking for \$8,000 for remodeling two engine houses; \$1,600 for quick-raising device for hook and ladder truck; \$1,750 for a combination chemical engine and hose wagon, and \$5,000 for a new engine for No. 12 company; also \$15,000 to place fire alarm wires underground.—Charles A. Taylor, Vice-president.

Tacoma, Wash.—City is considering installation of the semaphore system in Tacoma's downtown district; cost, \$2,000.—J. B. Hawthorne, Chairman City Council; Geo. McAlevy, Fire Chief.

Madison, Wis.—The Fire and Water and City Property Committees have decided to recommend to the Council that the fire alarm system be changed from two to five circuits; cost, \$3,000; Committees will also recommend that the Fire Department's wires be placed underground on those streets along which run the conduits of the Wisconsin Telephone Company.

Niagara Falls, Ont., Can.—The vacant property of the Grand Trunk Railroad at Bridge street and Victoria avenue has been chosen as the site for the new West End fire hall.

BIDS RECEIVED AND CONTRACTS AWARDED

Winchester, Ky.—Council has accepted the report of committee recommending the purchase of a motor combination chemical and hose wagon for the Fire Department; it will hold thirty gallons of chemicals, has 1,200 feet of hose and a 20-foot extension ladder, with complete equipment.

Cohoes, N. Y.—The Board of Fire Commissioners received bids for hose, Feb. 4, as follows: Scotland & Munro, 1,000 feet of Goodrich brand at 90 cents per foot, 1,000 feet of Chieftain brand at 80 cents; H. M. Sweet, representing Eureka Fire Hose Company, Eureka brand at \$1.10 per foot, and Paragon at \$1.—Mayor Hanson, Chairman.

Dallas, Tex.—The Municipal Commissioners have given approval to the recommendation of Fire Commissioner Seay that the contract for 3,000 feet of fire hose be awarded to the Fabric Fire Hose Company for Keystone brand No. 4 at 82 cents; there were three other bids.

ELECTRIC RAILWAYS

Helena, Ark.—Surveys have been made for the ten-mile electric line of the Helena Street Railway and Interurban Co.; contract to be let in the spring.—J. W. Burks, Jr., President; J. M. Vineyard, Secretary, Helena.

Fresno, Cal.—The Board of Supervisors has granted a franchise for an extension of its line to the Wilson and North Fresno tracts to the Fresno Traction Company.

San Diego, Cal.—Council has advertised for bids for the electric street railway franchises asked for by the Point Loma Railway Company.

San Francisco, Cal.—The Clear Lake Northern Railway Company has been incorporated to build an electric line in Lake County; capital, \$1,000,000.—R. C. Burnett, R. M. Sims, Marion Veckl, W. I. Broveck and E. Schwab, Incorporators.

San Francisco, Cal.—The Stockton Tunnel & Railway Company has asked for a franchise for a street railway along Stockton street, from Market street to the Bay at North Beach, and for permission to tunnel beneath the street under the Stockton street hill from Sutter to Sacramento street.—F. D. Stringham, Promoter.

San Francisco, Cal.—Hillyer, Stringham & O'Brien have filed an application with the Board of Supervisors for a franchise for a street railway system to begin at Stockton street and Market streets, and out Stockton street to Sutter street, through a tunnel of four blocks from Sutter street to Sacramento street, then to the surface again to the bay.

Vallejo, Cal.—The Randall, Wright & Trowbridge Company, Oakland, will enlarge upon its plans, and will build a railway from Vallejo to Benicia, and also to include the Vallejo White Sulphur Springs in its route.—R. L. MacFarlane, Representative.

Montrose, Col.—Boston capitalists are securing right-of-way for an electric railway to traverse the entire Uncompaghe Valley, as well as the valley of the North Fork of the Gunnison; line will run from Montrose to Ouray, also to Delta, Poma and Hotchkiss; length, ninety miles.—I. N. Pepper, Montrose, Promoter.

Jacksonville, Fla.—Council has passed an ordinance to permit the Seaboard Air Line Railway to construct a side track across Union street.—W. H. Sebring, Mayor.

Galesburg, Ill.—Council has passed propositions submitted in the franchise of the Galesburg & Rock Island Traction Company; company will open West street; \$2,000,000 is ready for construction work.

Mattoon, Ill.—The Mattoon, Shelbyville, Pana & Hillsboro Traction Company has secured a franchise to build an electric railway in and between Mattoon, Shelbyville, Tower Hill, Nokomis, Windsor and Irving.—W. R. Patton, of Charleston, President; J. B. Craig, of Mattoon, Secretary.

Petersboro, Ill.—The Springfield, Beardstown & Quincy Railway Company will build an electric railway between Springfield and Quincy; capital, \$150,000.—H. H. Colby, President; R. E. Bone, of Petersburg, Secretary and Treasurer.

Frankfort, Ind.—The Kokomo, Frankfort & Terre Haute Traction Company, 207 South Main street, will begin construction work in the spring; line will connect Kokomo, Frankfort, Colfax, Crawfordsville, Rockville and Terre Haute.—Oliver Gard, Frankfort, President; E. B. Swift, Secretary; M. W. Elkenberry, Kokomo, Treasurer.

Maquoketa, Ia.—An electric railway will be built to connect Davenport, Eldridge, Elwood, Grand Mound, Maquoketa, Andrew, La Motte and Dubuque, by the Davenport, Maquoketa & Dubuque Railway; length, 90 miles; the power station and repair shops will be located at Maquoketa.—O. M. McCaffrey, Maquoketa, Promoter.

Red Oak, Ia.—Surveys have been completed for the proposed road of the Red Oak and Southwestern Interurban Co.; cars will run from Red Oak to Des Moines, via Cumberland, Greenfield, Redfield and Adel; length, 40 miles.—B. Schreiner, Des Moines, Ia., Engineer.

Bath, Me.—An application has been made by the Tuscarora Traction Company to the Public Service Commission for right to issue bonds and stock; company is promoting a proposed trolley line from Addison through the towns of Jasper and Woodhull, which are at present without railroad connection.

Baltimore, Md.—The Kent Traction Company is planning to begin construction on the proposed 12-mile overhead electric railway between Tolchester and Chestertown this spring; power station and repair shops will be located in Chestertown.—A. A. Lamkin, 611 Equitable Bldg., Manager.

Benton Harbor, Mich.—The Benton Harbor-St. Joe Railway & Light Company will build about a 12-mile extension this spring from Benton Harbor and will probably call for bids for the same.—H. C. Mason, General Manager, Benton Harbor.

St. Paul, Minn.—The MacAlester and Groveland Park Improvement Association is urging the extension of the Grand avenue car line.

Winona, Minn.—The Winona Merchants' and Business Men's Association is urging the construction of an electric line to Rushford.

Long Branch, N. J.—The Special Committee and Mayor McFaddin have recommended that Council should use every effort to get a trolley system installed on Broadway and Third avenue.

New York, N. Y.—The Board of Estimate has received an application from the Pelham Park Railroad Company for the consent of the Board to change in motive power, from horse power to electricity, in the operation of its street surface railroad extending through Pelham Bay Park, from Bartow station to the junction with the City Island Railroad, at or near Marshall's Corner, in City Island; also an application from the City Island Railroad Company to operate its railway as an electric surface railway instead of by horse power, from the junction with the Pelham Park Railroad at or near Marshall's Corner, in Pelham Bay Park, to a point at or near Belden Point in City Island; both referred to Chief Engineer.

New York, N. Y.—The South Shore Traction Company is planning to build and operate an electric railway from the Nassau County line at Central avenue, through Jamaica, Hoffman boulevard and Thompson avenue, to and across the Queensboro bridge; Manhattan terminal at first will be at Fifty-ninth street and Second avenue.—W. B. Spencer, Times Bldg., Chief Engineer.

Asheville, N. C.—Richard S. Howland, formerly of Providence, is prominent in a new railroad company, the Asheville & East Tennessee, which is to be built northerly from Asheville through the mountains to Hunteale, N. C.; new road will include the line of the Weaverville Electric Company, which is graded from a point near Mr. Howland's home in Asheville to Weaverville, and which will be ready for operation in the spring; at Hunteale connection will be made with the Carolina, Clinchfield & Ohio, now being built through Virginia,

Tennessee, North Carolina and South Carolina to Spartansburg, S. C.

Asheville, N. C.—The Asheville Electric Company has purchased the electric lines and equipment of the Biltmore estate of Geo. W. Vanderbilt; extensions and improvements, aggregating over \$100,000 are contemplated during the present year.—C. E. Waddell, Superintendent.

Charlotte, N. C.—The Charlotte Gas and Electric Co. has taken preliminary steps for extending the Charlotte Electric Railway to the Catawba River.—E. D. Latta, President and Treasurer; J. L. Chambers, Secretary.

Youngstown, O.—Council has granted a franchise to Lake Erie & Youngstown Railroad Company; construction will begin very soon; line is to run to Conneaut, O.; cars driven by gasoline engines will be used.—J. H. Rurlman, President.

Woodward, Okla.—The Woodward Interurban Railway Company will construct an electric railway connecting Mutual, Richmond, Stilling, Canton, Ft. Supply, Buffalo and Englewood, Kan.; office, Woodward; length, 140 miles; capital, \$25,000.—James Spurlock, Homer Wilcox, Joe Boquet, Joe Ennis, William Payne, Robert Innis, Frank Tucker, Earl Workman and Ben F. Willett, Incorporators.

Portland, Ore.—Articles of incorporation of the Portland, Baker City & Butte Electric Railroad Company have been filed; company is incorporated at \$2,000,000; incorporators are local men unknown in the railroad world; road will run from Portland to Baker City, across Idaho and Montana to Butte.

Allentown, Pa.—A new electric railroad company, to be known as the Inter-County Electric Railroad Company, is being organized at Allentown with the intention of running another line between Allentown and Reading; line is to take in Emmaus, Macungie, Alburtis, Shamrock, Longswamp, Mertztown, Hancock and Tipton; right-of-way has been secured to cut across Salisbury Township and the company is capitalized at \$500,000; line will enter Allentown at Sixteenth street; plan is to start at Lyons and work east and west until the line is completed.

Lansdowne, Pa.—At the last meeting of Council an ordinance was presented by the Sharon Hill & Upper Darby Street Railway Company, asking for a right-of-way over certain streets for a double-track system to be extended to the terminal at Sixty-ninth street; since this company went before Council the Philadelphia & Garrettford Street Railway Company has also entered the field and filed papers with the Court, at Media, for two extensions to be made to its present road north of Lansdowne; this company presented an ordinance before Chester Council, the measure being adopted on first and second readings; ordinance of the Sharon Hill company was referred back to the Committee for further consideration; Thomas K. Bell, Chief Engineer of the Interstate Railways Company, of which the Sharon Hill company is a branch, has promised that the company is going to reconstruct the Delaware County & Philadelphia Electric Railway, and estimated that the cost of building the proposed road through Lansdowne would reach \$200,000, and that it would cost \$500,000 to extend the line to Sharon Hill.

Schenksville, Pa.—The Perkiomen Valley Traction Company is considering the construction of an electric railway between Collegeville, Trowbridge, Gratersford, Schenksville, Delphi, Zieglerstown, Perkiomenville and Green Lane.—I. H. Bardman, Schenksville, President; I. H. Smoyer, Green Lane, Secretary.

Scranton, Pa.—Council has received an ordinance permitting the Scranton Street Railway to double track Washington avenue.

Seneca, S. C.—A. W. Thompson is promoting an electric railway to be constructed between Walhalla and Seneca.

Amarillo, Tex.—The Amarillo Improvement Company will build an electric railway to San Jacinto Heights.

Brownsville, Tex.—Council has under consideration three applications for street car franchises, two by local parties and one from outsiders; each of the applicants agrees to construct at once upon the granting of the franchise an electric railway to cover the entire city and West Brownsville and eventually cross the river to Matamoros, when the international bridge is built.

Fort Worth, Tex.—The Southern Traction Company will build an interurban railway from Fort Worth via Everman, Burleson and Joshua to Cleburne; preliminary surveys have been completed and location surveys will be made immediately; it is proposed to use high-speed gasoline motor cars.—B. G. Leake, Chief Engineer; F. H. Peters, 28 Dundee Bldg., President.

Weatherford, Tex.—Council has granted franchise for a street car line to J. T. Patterson and associates of this city, under the agreement that one mile of track shall

be completed within one year and two miles within three years.

Seattle, Wash.—Although the Seattle Electric Company is laying steel in Pine street, a franchise has been granted to the Seattle, Renton & Southern Railway Company over Third avenue and Pine street by Council; the Seattle Electric is acting under a temporary permit; Pine street is a canyon route and the Seattle Electric Company's application for a franchise over the street has been ordered to be advertised.

Seattle, Wash.—Mayor John F. Miller has signed the franchise awarded to the Seattle, Renton & Southern, over Genessee street and others in the old city of Columbia; extension will be a part of the main line of the Crawford system and transfers will be issued to and from the present line.

Wellandport, Ont., Can.—The Dunnville, Wellandport & Beamsville Electric Railway Company will begin construction this spring; road will extend from Dunnville through Wellandport to Beamsville; distance, 23 miles; capital stock, \$400,000.—James A. Ross, Wellandport, President; W. J. Aikens, Dunnville, Secretary; R. T. Gough, Toronto, Chief Engineer.

BIDS RECEIVED AND CONTRACTS AWARDED

Clarinda, Ia.—The Engineering Construction and Securities Company, Chicago, Ill., has secured a contract for the financing and construction of an eighteen-mile railroad from Clarinda, on the C., B. & Q. Railroad, via College Springs, to Blanchard, Ia., or Elmo, Mo., on the Wabash Railroad; active work on the financing will begin at once, the work to be in charge of C. B. Judd, Chief Engineer, and C. A. Ross, of the company.

Phelps, N. Y.—The proposed Geneva, Phelps and Newark Electric Railroad will begin the work of construction about the first of April; The J. G. White Construction Company, of New York City, will have the contract for building the line, and everything, with the exception of a few minor details, is in readiness; the sub-contractors have been instructed to have their laborers on the job April first.

BRIDGES

Sacramento, Cal.—The State Legislature will consider a bill providing for the building by the State of a suspension bridge over the Carquinez Straits, near the towns of Benicia and Port Costa; cost, at least \$7,000,000.—N. Ellery, State Engineer.

South Pasadena, Cal.—Plans have been prepared for the immense bridge which it is proposed to erect over the Arroyo Seco, connecting Avenue 66 in Garvanza and Mission road; Committee of seven, of which George W. Wilson of this city is Chairman and Carl Packard of Highland Park is Secretary, have had plans drawn for a concrete structure which will cost \$150,000; it will be 950 feet long and 75 feet wide and will have 14 spans each 60 feet in length and eight piers.

Bridgeport, Conn.—A temporary lift bridge at Congress street is favored by the Bridge Commission of which Senator Manwaring is Chairman; estimates are now being received on both a lift and a pontoon bridge, and it is expected that Major Taylor, the Government Engineer, will grant a permit shortly for the construction of a temporary structure; after the contract is awarded it will be three weeks before the structure can be put in place.

Grangeville, Idaho.—The State Legislature will consider a bill providing for a bridge over the Salmon River at Goff.

St. Maries, Ida.—City has approved plans for the new bridge across the St. Joe River; structure will be of steel; cost, from \$18,000 to \$20,000.

Chicago, Ill.—City will construct bridges at Wells street over the Chicago River, cost \$400,000; at La Salle street over the Chicago River, \$360,000; over the north branch of the Chicago River at Blackhawk street, \$250,000; at Kedzie avenue over the Illinois-Michigan canal, \$25,000; over Drainage Canal at California avenue, \$100,000.—Thomas Pihfeldt, 200 Randolph street, Bridge Engineer; J. J. Hanberg, Commissioner Public Works.

Moline, Ill.—The Committee on Commerce of the Senate has made a favorable report on Senator Cullom's bill to authorize the construction of two bridges across Rock River between Henry and Rock Island Counties; resolution adopted by the Board of Supervisors of Henry County ordering the erection of two bridges across Rock River provides that the work shall proceed when Rock Island County is able to bear its share of the expense; one of the bridges will be erected at Pones' Camp and the other at Colona.

Mishawaka, Ind.—Citizens are urging the erection of another bridge across the river.

Vincennes, Ind.—The County Commissioners have instructed J. S. Spiker to prepare plans and specifications, also estimates of cost of a bridge over the City Ditch.

Des Moines, Ia.—At the request of Council two drawings have been prepared by City Engineer Budd and F. E. Marsh, architect, of the Seventh street viaduct, showing arch spans over the tracks, to be compared with the plans submitted by the railroads with their provisional acceptance of the ordinance which has been read to Council.

Dubuque, Ia.—The Dubuque, Illinois and Wisconsin Railroad Company has done nothing definite toward constructing a bridge over Mississippi River connecting Dubuque and East Dubuque.—L. M. Langstaff, Dubuque, Secretary.

Marshalltown, Ia.—The County Auditor has rejected all bids opened for constructing a reinforced concrete culvert on Thirteenth street, Marshalltown; new bids will be called for.

Topeka, Kan.—In the near future the bridge across Soldier Creek on Central avenue will either be raised several feet to conform with the height of the dike, and be lengthened 50 feet on both ends, or be replaced with a new concrete bridge with a brick paving floor; probabilities favor the latter plan; the proposed bridge is to be on a level with the top of the dike and the dike and the foundation and trestle work is to be so arranged and be made strong enough for the laying of the brick flooring; if either plan is adopted the city and county will jointly pay the expense.

Milo, Me.—Town is considering the construction of a bridge over the Piscataquis River; cost, \$8,000.

Baltimore, Md.—Westinghouse, Church, Kerr & Co., New York, have completed surveys, prepared estimates, etc., on feasibility of constructing bridge across Chesapeake Bay, connecting Baltimore with the Eastern Shore; have recommended rolling lift type; estimated cost at \$5,000,000.—Thos. Boggs, Secretary Merchants and Manufacturers' Association.

Lansing, Mich.—The Board of Public Works will soon receive bids for the construction of a 134-foot span steel or reinforced concrete bridge over Cedar River; cost, \$40,000.—H. C. Collar, City Engineer.

St. Paul, Minn.—Bills authorizing the city to issue \$750,000 bonds for local improvements will be introduced in the House by the Ramsey Delegation; bills include one for \$400,000 bonds for a bridge across the Mississippi in the downtown district, either at Minnesota, Sibley, Broadway or some nearby street; \$150,000 bonds for a bridge at the end of Summit avenue, provided Minneapolis votes a like amount; \$100,000 for public playgrounds, and \$100,000 asked by Representative G. W. Rodenberg for the continuation of the Third street bridge and a bridge across the tracks on Earl street.

Magnolia, Miss.—The Board of Supervisors of Pike County has adopted plans and specifications for two steel bridges, one across Bogue Chitto River at Dillon and the other across Magee's Creek at Tylertown.

Poplarville, Miss.—Pearl River County Board of Supervisors has invited bridge builders to file with clerk plans and specifications for steel bridge over Hobolochitto, near Pickayune, Miss.

Artesia, N. M.—Bids will be advertised for in 15 days for steel bridges at Artesia and Malaga, and also for a reinforced concrete bridge across the Pecos River at Carlsbad.

New York, N. Y.—The Mayor and Board of Aldermen have approved the ordinance providing for an issue of \$82,823 corporate stock to provide means for city's share of estimated cost of construction of substructure of diagonal viaduct over the Sunnyside Yard of the Pennsylvania Tunnel and Terminal Railroad Company to furnish an approach to Blackwell's Island bridge, Borough of Queens.

Niagara Falls, N. Y.—The Board of Public Works has asked the Board of Estimate and Apportionment for \$14,630 to repair the bridges over the Erie tracks at Walnut and Ferry avenues; of this amount \$3,430 is needed for the former and \$6,200 for the latter.

Syracuse, N. Y.—The Syracuse Automobile Club is urging the erection of a new bridge over the Seneca River at the head of Cayuga Lake where the old Free street bridge now exists.

Asheville, N. C.—County Commissioners are considering \$50,000 bond issue for building a bridge over French Broad River.

Barberton, O.—Council has approved and adopted the plans of the Village Engineer for the construction of the Cornell street viaduct.

Cleveland, O.—The Councilmanic Committee in session with the Mayor, Vice-Mayor and Board of Service has recommended that a resolution submitting to a vote of

the people a \$35,000 bond issue for the reconstruction of the Central viaduct be adopted; also that a high level bridge with a fixed span be erected on the site of the present Superior viaduct.

Greenville, O.—Bids will be received until February 25 for \$10,000 bridge bonds.—Frank Snyder, County Auditor.

Tiffin, O.—City is considering putting in new stringers for the Market street bridge.—C. J. Peters, City Engineer.

Toledo, O.—Council has received a plan to submit to a vote of the people the proposition of issuing bonds for \$1,000,000 to build a new Cherry street bridge.

Youngstown, O.—The Erie, B. & O. and Pennsylvania railroads have reached an agreement with city officials for the construction of the proposed Spring common bridge; railroad tracks are to be lowered so that the grade of the bridge will be reduced two feet; a rearrangement of the floor of the bridge will add another foot to the reduction of the grade.

Sapulpa, Okla.—City is considering erection of two bridges over the Frisco tracks; plan agreed upon is for the city to build the approaches and the railroad company the part across the tracks.

Sapulpa, Okla.—Commissioners of Creek County and Mannford Township Board are considering the construction jointly of an 800-foot bridge over Cimarron River.

North Scranton, Pa.—The North Scranton Board of Trade is again urging the erection of proposed viaducts at Mulberry street and North Main avenue.

Scranton, Pa.—Council is considering petition for a culvert over Meadow Brook.

Providence, R. I.—Council has instructed the City Solicitor to apply to the General Assembly for such legislation as will enable the city to erect a bridge from Providence street to Market square, and also give the city power to establish a "hucksters' market" and charge rental therefor; Commissioner of Public Works Slade has informed Council that the estimate of the City Engineer of the cost of bridging Providence River is as follows: Steel bridging, including concrete floors and paving, \$261,629; new stone piers and work on parapet wall, \$150,623; removing and disposing of portions of old work that are worthless, \$3,000; total, \$415,252, to which add 15 per cent. for contingencies, amounting to \$62,287.80, which makes a cost of \$477,539.80.

Yorkville, S. C.—Cherokee and York Counties will jointly construct bridge over Broad River at or near Howell's Ferry.

Maryville, Tenn.—The Blount County Commissioners have appointed a Committee consisting of E. Hitch, Walland, Tenn.; W. L. Russell, South Rockford, Tenn.; and J. S. Patty, Bank, Tenn., to investigate the cost and receive bids for two steel bridges across Little River.—Clay Cunningham, Clerk.

Weatherford, Texas.—City and Parker County will jointly construct concrete bridge across Town Creek, on North Main Street; cost, \$8,000.

Danville, Va.—The Council Committee on Streets and Bridges has recommended that \$100,000 be appropriated for the erection of a bridge across the Don River and the paving of West Main street.

Bellingham, Wash.—Council has passed an ordinance providing for a bridge across Whatcom Creek between Grand avenue and B street; cost, \$4,000; bids will be received soon.—H. W. Troutman, City Engineer.

Chelan, Wash.—The State Legislature will consider a bill providing for the building of a bridge over the Chelan River at Wooden Avenue; cost, from \$10,000 to \$12,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Redlands, Cal.—Bids were opened by the Supervisors, Feb. 5, for the proposed steel bridge the County will construct across Lytle Creek on First street, between town and Rialto, the award going to the Charles D. Sheeley Company, of Denver, Col., at \$9,972; there was a lower bid, that of the Joliet Bridge and Iron Company, which bid \$9,620, but the bid was not certified to, and in other ways did not meet the legal requirements, so that it was not considered. The other bidders were: Union Iron Works, \$9,990; Modern Steel Structural Company, \$10,260; Atlantic, Gulf & Pacific Company, \$10,375; Mercereau Bridge Construction Company, \$10,995.

Nampa, Ida.—J. H. Forbes & Co., of Caldwell, have been awarded the contract by the city for constructing a bridge over Indian Creek on South Eleventh street.

Cedar Rapids, Ia.—Bids were opened Jan. 28, for the construction of the new bridge across Indian Creek at Thirtieth street, as follows: Bartlett & Kling, Cedar Rapids, \$7,405; Toledo Bridge Co., \$6,250; Union Engineering Co., \$7,925; F. J. Miller, \$5,788; Clinton Bridge Co., Clinton, Ia., \$4,262; Cook Construction Co., \$3,717; Cedar Construction

Co., \$5,970; Pan-American Bridge Co., \$5,140; Midland Bridge Co., \$5,650.—L. J. Storey, City Clerk.

Topeka, Kan.—When the bids for the proposed new bridge on Central avenue across Soldier Creek were read at the Council meeting, Feb. 1, it was found that the lowest bid was made by the Topeka Bridge and Iron Works; this company made nine bids for as many styles of bridges, ranging from \$3,060, the lowest bid submitted by any of the bridge companies, to \$5,270; the highest bid was \$14,942, submitted by the Missouri Bridge and Iron Company, of Leavenworth; the other bridge companies submitted bids as follows: Canton Bridge and Iron Company, Canton, O., \$3,630; A. M. Blodgett Construction Company, Kansas City, Mo., \$7,100 and \$7,996; Capital Iron Works, \$4,796, \$7,209 and \$7,505; Midland Bridge Company, Kansas City, Mo., \$11,150; Leavenworth Bridge Company, \$3,696 with \$10 a cubic yard extra for concrete abutments; the matter was referred to the Committee on Public Works.

Bowling Green, Ky.—The Argonia Bridge Co., Lebanon, O., has secured the contract at about \$4,000, for constructing the new bridge at Mottley's Mills for the Warren Fiscal Court.

St. Paul, Minn.—The contract for constructing a reinforced concrete bridge over the ravine on Riverside boulevard has been awarded to the Romer Construction Company for \$6,964, the structure to be 105 feet 8 inches long, with a 28-foot roadway and two 6-foot walks.

New York, N. Y.—Bids were received Feb. 4 by J. W. Stevenson, Commissioner of Bridges, for furnishing and delivering lumber to the Williamsburg Bridge: Yellow Pine Co., 16 Beaver street, \$9,049; A. J. Jacobson & Son, \$9,970; John C. Orr, \$9,228; Louis Boisset, \$9,076; Brooklyn Lumber to the Williamsburg Bridge: Yellow Cross, Austin & Ireland Lumber Co., \$10,652; Watson & Pittinger, 420 Carroll street, Brooklyn, \$9,480.

Beaufort, N. C.—Bids were received as follows, Jan. 30, by Capt. Earl I. Brown, Corps Engineers, U. S. A., Wilmington, for constructing a steel draw-span highway bridge with pile and concrete foundations on Core Creek, near Beaufort, New Jersey Foundry & Machine Co., New York, N. Y., \$19,487, through truss swing; Grant Wilkins, Atlanta, Ga., \$22,784, through truss swing; Merrell-Ruckgaber-Fraser Co., New York, N. Y., \$19,650, plate girder swing, 26-in. depth; \$20,940, same type, 27-in. depth; \$19,050, pony truss swing; Schwiers & Sutton Co., New York, N. Y., \$20,862, pony truss swing; G. & W. Mfg. Co., New York, N. Y., \$16,347, through truss swing; Crafts & Smith, Dublin, Ga., \$18,991, through truss swing; \$21,491, Strauss trunnion bascule lift plate girder type; Penn Bridge Co., Norfolk, Va., \$18,690, pony truss swing; \$20,630, plate girder swing; \$20,341, Scherzer rolling lift, single leaf; \$21,760, same type, double leaf; Southern Construction Co., Burlington, N. C., \$20,487, bascule lift, single leaf; Strauss; Nelson-Merydith Co., Chambersburg, Pa., \$21,096, through truss swing; \$25,095, bascule lift single leaf; Strauss; \$20,817, plate girder swing; \$21,180, pony truss swing; Roanoke Bridge Co., Rock Hill, S. C., \$18,876, through truss swing; Owego Bridge Co., Greensboro, N. C., \$20,261; through truss swing. The G. & W. Mfg. Co., 26 Cortlandt street, has been recommended for award.

Cincinnati, O.—The County Commissioners on February 2 awarded the contract for constructing a bridge on Bogart road in Anderson Township to Peter Praeontler for \$5,529.

Toledo, O.—The Toledo-Massillon Bridge Co., city, was awarded contract, Feb. 4, for the repairing and strengthening of the present Cherry Street Bridge, at \$3,100; this was the low bid of four; it does not include the putting in of a new span; other bidders were: Motler & Confer, \$3,395; Capitol Construction Co., \$4,000; Wynkoop & McGormley, \$3,550.

Monongahela, Pa.—The contract for construction of the bridge across the Monongahela River was let, Feb. 8, at a joint meeting of the Commissioners of Allegheny and Washington Counties to the Fort Pitt Bridge Co., at \$262,267; each county is to bear half of the expense.

Knoxville, Tenn.—The Converse Bridge Company, Chattanooga, has secured the contract for two steel bridges for the county, one at Minot, and one at Wellsville.

Maryville, Tenn.—The Blount County Commissioners have awarded the contract to the Converse Bridge Co., Chattanooga, for constructing two steel bridges across Nine Mile Creek.—Clay Cunningham, Clerk.

Dallas, Tex.—The contract and bond of A. S. Adams for the erection of the concrete bridge over the Hall street crossing of Turtle Creek were approved by the Municipal Council. The work proper is to cost \$4,700. With approaches and other necessary work, it is said the expenditure will be \$7,000 or more.

Madison, Va.—The Roanoke Bridge Co.,

of Roanoke, has been awarded the contract at \$4,217 for a steel bridge across Robinson River near here by the State Highway Commission.

Kennewick, Wash.—The North Coast Railway Company has awarded the contract to the Puget Sound Bridge & Dredging Company, Seattle, Wash., for the construction of a steel and masonry bridge over the Columbia River near here; estimated cost, \$1,000,000.

Buckeye, W. Va.—The following bids were received by the County Court of Pocahontas County, February 2, for a highway bridge over Greenbrier River at Buckeye: (a) superstructure, (b) concrete masonry, (c) stone masonry: Canton Bridge Company, (a) \$3,803; (b) \$10, Brackett Bridge Company, (a) \$4,462; (b) \$6; (c) \$9. York Bridge Co., (a) \$3,260; (b) \$9; (c) \$8. Nelson-Merydith Company, (a) \$3,664; (c) \$9. Roanoke Bridge Company, (a) \$3,900. Faris Bridge Company, lump sum for all, \$7,952, awarded contract.

MISCELLANEOUS

Birmingham, Ala.—Queenstown Company, 2113 First Avenue, Birmingham, Ala., will receive bids for erection and equipment of brick plant; 20,000 daily capacity.

Greenville, Ala.—City will erect Carnegie Library; cost, \$10,000.

Montgomery, Ala.—City is considering plan for a \$10,000 bond issue at once for construction of wharf and warehouse.

Little Rock, Ark.—The Central Heating and Manufacturing Company will improve plant, including installation of 500-horsepower boiler and 5,000,000-gallon centrifugal pump.

Napa, Cal.—The Board of Health has decided to petition Council for a site for a dumping ground for the erection of a crematory.

Sacramento, Cal.—The Board of City Trustees has adopted specifications for an addition to the City Garbage Crematory.

San Jose, Cal.—Mayor Davison has returned without his approval the ordinance calling for an election to be held February 25 to pass upon the question of issuing \$40,000 in bonds for the purpose of acquiring a site for, and the purchase and installation of a city garbage incinerator.

Hartford, Conn.—Council has passed a resolution asking that \$15,000 be appropriated to the Public Building Committee and City Plan Commission for the building of a house of public comfort.

Washington, D. C.—An American consul in a city in western Europe reports that proposals for the purchase of an ambulance for that city have been published recently by the municipal authorities. This order was not restricted to local firms, but as the time for receiving bids expired January 23, it necessarily precluded the possibility of American concerns taking up the matter and submitting estimates. The consul, however, has forwarded a copy of the specifications and states that beneficial results may follow if manufacturers of ambulances and appliances will give this matter their attention, as a demand for such a class of goods is growing up in that part of Europe, and if opportunities are effectively utilized quite an important trade in this line might eventually be worked up.—Address No. 3062, Bureau of Manufactures.

Pensacola, Fla.—The Board of Public Works will at once improve and rebuild the wharves owned by the city.

Columbus, Ga.—The Bridge and Wharf Committee has recommended that wharf be extended 150 feet farther; cost, from \$8,500 to \$11,000.

Rexburg, Ida.—The Board of County Commissioners has accepted the plans and specifications of Wyland & Fennel, of Boise, for the construction of the County Court House.

Pekin, Ill.—The new Commissioners of the La Marsh Drainage District plan several material changes, including the installation of a new rope drive on the pump so that it can be run at its full capacity without running the engines at as high rate of speed as has heretofore been necessary.—V. P. Turner and C. L. Velde, Commissioners.

Fort Wayne, Ind.—The Board of Public Works and County Commissioners will consider the bill now being drafted by City Attorney Colerick and authorizing the Board of Public Works to undertake the straightening, cleaning, deepening and beautifying of rivers; this is a plan of the city which is indirectly connected with the proposed Swinney Park Boulevard.

Indianapolis, Ind.—Council has passed an ordinance appropriating \$3,700 for an automobile touring car for the Police Department.

Newcastle, Ind.—Henry County Board of Commissioners has rejected the bids for constructing a brick barn at the County Jail; bids will be readvertised.—W. L. Risky, County Auditor.

Kansas City, Kan.—Plans have been pre-

pared by Architect Geo. Kessler, Fidelity Trust Bldg., for a public park at Tenth street, Washington boulevard, Eleventh street and Minnesota avenue; also at Eleventh street, Lawromee avenue and Armstrong avenue.—J. P. Angle, Vice-president Board of Park Commissioners.

Kansas City, Kan.—J. W. Shores and E. A. Enright are promoting a company which is planning the erection of an ice plant at Sixteenth street and Stewart avenue.

Topeka, Kan.—D. F. Neiswander, of Kiro, President of the Kaw Valley Drainage Board, has consulted with V. R. Parkhurst, Engineer of the North Topeka Drainage Board, in regard to building a dike in the Kaw Valley district; Mr. Neiswander's idea is to build a continuous dike extending about a mile east from Silver Lake along the north bank of the Kansas River.

New Orleans, La.—The Dock Board has not decided upon any definite plans for wharf construction besides erection of wharf from Third to Eighth Streets, to cover 197,036 square feet of space and cost about \$200,000; project is being considered for building of upper steamboat wharf and sheds estimated to cost \$246,000, and also lumber wharf above Illinois Central Railway wharf.

Baltimore, Md.—The Fire Board will erect wharf at end of lumber pier No. 7 of new dock system.—E. M. Parrish, President.

Lawrence, Mass.—Mayor White and County Commissioners Moody Kimball, James C. Poor and John M. Grosvenor are considering the county's wishes in regard to purchasing 1½ acres of land owned by the city in the rear of the poor farm, near the Training school, for playstead and building purposes.

Lynn, Mass.—The Board of Aldermen has adopted an ordinance for the Finance Committee to incorporate in the appropriation bill \$5,000 to be used for playground purposes on Broadway Place.

Saginaw, Mich.—Plans and estimates are being prepared by City Engineer R. W. Roberts for a dock to be erected at foot of Hancock street.

Minneapolis, Minn.—The Board of Education will ask the Legislature for \$300,000 for more playgrounds.

St. Paul, Minn.—Street sprinkling will continue to be done by the City Engineer's Department if the Council accepts a favorable report on a resolution directing City Engineer L. W. Rundlett to purchase six additional sprinkling carts, returned by the Committee on Streets of the Assembly.

St. Paul, Minn.—A bill authorizing the city to issue \$100,000 bonds for public playgrounds will be introduced in the House by the Ramsey Delegation.

St. Paul, Minn.—The MacAlester and Groveland Park Improvement Association is considering the establishing and equipping of a playground near the Ramsey school.

Virginia, Minn.—Council has passed resolutions authorizing the purchase of two lots for park purposes.

Gulfport, Miss.—The Street Commissioner has been authorized to purchase a street sweeper and street sprinklers and two horses for the Fire Department.

St. Louis, Mo.—Plans for a \$50,000 three-story police station have been prepared by Architect J. A. Smith.

University, Mo.—This new city is considering the establishment of parks, construction of 24 miles of boulevards, the construction of a lighting plant, new sewers, a City Hall and a public school.—E. G. Lewis, Mayor.

Omaha, Neb.—The Board of Fire and Police Commissioners has authorized the purchase of an automobile police patrol.—Chief Donahue.

Gloucester, N. J.—Council has authorized the Finance Committee to negotiate the sale of the recent \$100,000 improvement bonds with Stein Brothers, of Baltimore, who were the highest bidders for the securities.

Jersey City, N. J.—The Suckley Park Association is urging the securing of the Suckley estate for County park purposes; in addition to tentatively accepting several methods of booming the project, the association decided to have a committee wait upon the Hudson County Board of Chosen Freeholders at the March meeting and urge the immediate issuance of bonds to provide the County Park Commission with money to buy the necessary land; Committee which will urge such action on the Board of Freeholders is composed of former Street and Water Commissioner James S. Nolan, Assemblyman William S. Davidson, Mayor Richard Lynch of West Hoboken, Charles W. Randall, Gustav Koven and Edward Savoye.

Perth Amboy, N. J.—Mayor Bollschweiler has recommended the purchase of motorcycles for one or more policemen.

Binghamton, N. Y.—A sketch containing plans and specifications with a rough estimate on the total cost of the proposed

City Hall will be submitted to Council by Adam Groth; Aldermen Leach and Peter Waters represent the Standing Committee.

Buffalo, N. Y.—The Board of Aldermen has adopted a resolution directing the Commissioner of Public Works to contract with the low bidder for the reconstruction of Station No. 1, Franklin street and the terrace, for Police Headquarters.

New York, N. Y.—The Hudson-Manhattan (McAdoo) Tunnel Company has applied for a franchise to build an extension from Thirty-third street and Sixth avenue to the Grand Central Station.

New York, N. Y.—E. C. Sherwood, 141 Broadway, will purchase a No. 2 Smith or No. 2 Ransome concrete mixer, with engine only or belt driven; good condition.

Pelham Manor, N. Y.—Architect Wm. A. Loney, Prospect avenue, has prepared plans and bids will be received in 20 days for a \$25,000 two-story Town Hall.—H. A. Anderson, Town Clerk.

Poughkeepsie, N. Y.—The Committee on Property will secure data concerning the construction of a lavatory underground.

Syracuse, N. Y.—The Special Highway Investigating Committee has recommended the purchase of an automobile for use of the County Highway Department.—W. H. Peck, Chairman.

Utica, N. Y.—City Engineer Arthur O'Brien has prepared plans for a public bath house to cost, exclusive of site and connections with sewers and water mains, \$13,500.

Utica, N. Y.—Rev. Dana W. Bigelow, Chairman of the Citizens' Committee on Playgrounds, has recommended that the city should secure and equip at least two playgrounds.

Cincinnati, O.—The Board of Public Service has transmitted an ordinance, which was referred to the Committee on Finance, authorizing the expenditure of \$1,000 for an automobile, the machine, when purchased, to be for the exclusive use of the Chief Electrician; Council also received an ordinance to appropriate property for playground purposes.

Cleveland, O.—The Councilmanic Committee of the Whole in session with the Mayor, Vice-Mayor and Board of Service has recommended to Council that the resolutions submitting to the people the question of issuing \$250,000 bonds for the new tuberculosis hospital be adopted.

Hamilton, O.—J. M. Hill has been selected as Consulting Engineer in connection with the proposed levee construction work.

Miamisburg, O.—Council will soon select plans for the new library.—Mayor Reiter.

Du Bois, Pa.—Dr. D. F. A. Wheelock, State Sanitary Engineer, has recommended that the town install a garbage plant for disposing of the heavier kinds of waste material.

Dunmore, Pa.—Burgess Chamberlain has sold \$60,000 borough bonds to Hayes & Son, of Cleveland, at a premium of \$2,101.

Hazleton, Pa.—City is considering a \$150,000 loan for the erection of a new City Hall and fire building.

Meadville, Pa.—Messrs. Crame, Kuppler and Cutter have been appointed a committee to investigate and report plans and estimates for a City Hall building on the site of the present market house.

Mt. Pleasant, Pa.—Council has decided upon the erection in the spring of a \$4,000 municipal building.

Scranton, Pa.—Council has passed a bond measure calling for \$18,000 for a new police station in West Scranton.

Williamsport, Pa.—A committee composed of Messrs. Mantz, Sennart and Hyman has drawn up specifications for street cleaning and flushing by contract; these have been referred to the City Solicitor and Engineer; specifications require bids on the cleaning and flushing of all paved streets for a period of three years.

York, Pa.—The electors of 30 cities and boroughs in the State will be asked soon to approve loans for sewer and other municipal improvements; at Shrewsbury, this County, the Borough officials desire the authorization of a loan of \$11,000 to erect water works; amounts of money to be asked for and the purposes for which they are to be used at various points in the State are as follows: Allentown, \$400,000, sewer; Altoona, \$300,000, water works; Beaver, \$15,000, City Building and Fire Department; Bethlehem, \$175,000, water works; Bridgeville, \$25,000, paving; Butler, Borough Building, \$50,000; Conshohocken, municipal improvement, \$125,000; Cresson, \$10,000, street improvement; Dawson, \$15,000 street improvement; Easton, \$45,000, garbage plant; Glen Osborne, \$26,000, sewer; Indiana, \$50,000, sewerage and street improvements; Lebanon County Court House, \$200,000; Marcus Hook, \$40,000, improvement; Milton, \$50,000, electric light; Mt. Penn, \$10,000, street improvement; Portage, \$25,000, sewer; Schuylkill Haven, \$11,000, municipal lighting; West Reading, \$25,000,

street improvement; Tamaqua, \$35,000, water works.

Cleburne, Tex.—Issuance of bonds to the amount of \$100,000 by the city of Cleburne is being agitated by many citizens, who are anxious to see much public improvement within the next year; street pavement, the construction of several large sections of storm sewers for better drainage, securing a site for a public park and building cement crossings throughout the city are among the improvements desired.

Dallas, Tex.—Improvement of park sites was the chief work outlined at a meeting of the Park Board; improvements suggested will call for the outlay of several thousands of dollars, to be expended in concrete walks and curbs, a concrete bridge or two and the planting of flowers and trees; immediate improvement of sanitary conditions at Fair Park was ordered.

Hamilton, Tex.—F. R. Allison, Secretary 10,000 Club, is collecting data and prices on mud-brick plant of 20,000 capacity daily; also on press-brick plant of same capacity.

Hillsboro, Tex.—City is considering erection of a \$4,000 City Hall.

Brigham, Utah.—A Committee composed of Wynn L. Eddy, John P. Christensen and John H. Horsley has been appointed by Mayor Blackburn to secure plans and specifications and estimates of cost of a suitable City Hall and to find if the necessary funds can be raised for this purpose.

Salt Lake City, Utah.—Mayor Bransford has laid before the members of the City Council a proposition which will, if carried through, provide for Salt Lake City an up-to-date and modern city market; the Mayor has found that the property on Fourth South, in the block bounded by Fourth South, State street, Third South and Second East streets, is larger than will be needed for the purpose which induced the Council to decide to purchase it; half of it will be sufficient for city stables, and the remainder will be quite enough to provide a market.

Seattle, Wash.—The Corporations Committee of Council finally fixed the life of the subway franchise asked for by W. S. Boody, of Philadelphia, and W. L. Dudley, of Seattle, at 65 years; at the end of that time the subway system, except the rolling stock, is to be turned over to the city, the rolling stock to be paid for at its appraised valuation fixed by a board of arbitration; routes as proposed by the promoters were accepted tentatively, depending on a final report from City Engineer R. H. Thomson.

Seattle, Wash.—The University Community Club and the Green Lake Improvement Club have taken up a plan to erect public boat and bathhouses and have appointed committees to go before the Park Board with the matter; the University Community Club desires to locate such a building on Union Bay, Lake Union, on the property of the State University; scheme of the Green Lake citizens is to build the combined boat and bathhouse on the Patterson tract adjacent to Green Lake boulevard, which has already been procured by the Park Board.

Seattle, Wash.—The Park Board has decided to purchase a playground site on Beacon Hill; Council will consider the purchase of 20 lots in the Thomas Gem tract.

Seattle, Wash.—The Park Board has ordered the purchase of a new \$1,400 dredging pump to facilitate work on the Green Lake Boulevard.

Wellsburg, W. Va.—The Board of Health has recommended the construction of a garbage crematory.

Appleton, Wis.—Articles of incorporation of the Wolf River Improvement Company have been filed with the Secretary of State; company has been organized to conserve the flood waters of the Wolf River and to let it down the river in the late summer and fall, and thus furnish the Fox and Wolf rivers with a normal flow of water the year around; it is proposed to construct a large reservoir, dams, etc., on the upper Wolf River north of the north line of Township No. 32, range 13, Langlade county, which will make a body of water covering practically 12 miles and containing from 4,000,000,000 to 6,000,000,000 feet of water. Frank J. Sensenbrenner, Representative of the Neenah and Menasha Water Power Company of Neenah; Capt. John M. Baer, of Appleton, of the Green Bay and Mississippi Canal Company, and William Van Nortwick, of Appleton.

Chippewa Falls, Wis.—The Chippewa and Flambeau Improvement Company, recently organized by owners of water power rights, had a bill introduced in the Legislature enabling it to contract, acquire, maintain and operate a system of water reservoirs and dams on the main rivers and streams of northwestern Wisconsin, such as Chippewa, Flambeau, Thornapple, Elke, Butternut and their tributaries; value of water powers on these rivers and tributaries is about \$10,000,000; company proposes by a system of reservoirs to improve navigation

of streams and prevent injury to property bordering on them and to make the flow as uniform as possible at all seasons, storing in reservoirs surplus for use during droughts; proposed capacity of reservoirs will be 1,500,000,000 cubic feet, and the company promises to have them in operation by January 1, 1911.

BIDS RECEIVED AND CONTRACTS AWARDED

Long Beach, Cal.—The following are the bids recently received by the Board of Public Works for the mile of concrete bulkhead and 30-foot cement walls on beach west of Hotel Virginia: The Patillo Concrete Company, \$137,000; Miracle Concrete Company, of Minneapolis, Minn., \$105,464; A. D. Chalmers, \$98,867, and A. H. Calkins, \$93,000.

San Francisco, Cal.—Contract has been awarded to the Pacific Portland Cement Company, Pacific Building, for furnishing 25,000 barrels of Portland cement for use in the Pacific Coast District of the Reclamation Service; the contract price is \$1.55 per barrel f.o.b. cars at Tolenas.

The Board of Harbor Commissioners, February 4, approved the \$5,000 bond furnished by the Healy-Tibbitts Construction Company, and signed a contract with that company for the construction of a concrete bulkhead and office foundation at Pier 5.

Fort Wayne, Ind.—The Committee on Contracts and Franchises, to whom was referred an ordinance approving contracts entered into between the city of Fort Wayne, Reginald and Burton McKinley, and David Winburn for the removal of garbage, after an investigation, recommends passage, and same was concurred in by Council. Reginald McKinley has charge of District No. 4, for \$900 per annum; Burton McKinley, District Nos. 2 and 5, for \$1,850, and David M. Winburn, Districts Nos. 1 and 5, for \$1,795.—Wm. A. Bayer, Marion B. Johnson, James M. Henry, Philip H. Wyss, Committee on Contracts and Franchises.

The County Commissioners opened bids February 6 for the furnishing of fifty voting machines for Allen County, and although four inquiries as to the specifications had been received, only one bid was submitted, from the Empire Voting Machine Company, the concern which manufactured the machine used in the election last fall. The Empire Company's bid was \$800 for each machine. The entire cost will, therefore, be \$40,000, and bonds will be issued to pay for them. The company agrees, however, to take its payment in amounts in proportion to the sums saved at each election. The specifications called for a nine-party machine, with a device for primary elections. The machines used here last fall were but seven party ones. The Empire Company is a consolidation of the United States Standard Voting Machine Company, and the Columbia and Dean companies, and manufactures the United States machine.

Lafayette, La.—Council, February 2, awarded a contract for numbering houses and naming streets to the Mouton Engineering Company, at 50 cents per number, with no charge for street; this insures the town very shortly a free mail delivery, as all other requirements of the Postoffice Department have been met.

Iowa, La.—The Board of Commissioners of Iowa Drainage District No. 1, Harley I. Longenbach, President, has awarded contract to the Wilkins Company, A. C. Wilkins, General Manager, of Jennings, for dredging canal near Iowa, 35 feet wide and between four and five miles long, which will drain about 10,000 acres of marsh lands; Wilkins Company has accepted bonds for \$19,000 in payment.

Fayette, Miss.—The Commissioners of Gum Ridge Drainage District have awarded contract to Robert Clarke, Natchez, for construction of system of canals and levees for draining about 5,000 acres; work contemplates approximately 140,000 cubic yards; \$40,000 of bonds will be issued.—C. H. Jenks, Consulting and Supervising Engineer.

New York, N. Y.—Bids were received as follows, February 4, by the Park Board for furnishing and delivering lumber for parks in Manhattan Borough: East River Mill & Lumber Company, 92d street and East River, New York, \$11,429; A. C. Jacobson & Sons, 81 Building street, Brooklyn, \$12,079; George H. Storm & Company, \$11,605; John T. Stevens, no total; W. P. Younge & Bros., \$11,457; Charles H. Heinsohn, \$11,956; Bell-four & Koch, \$13,463.—Henry Smith, President Board.

Troy, N. Y.—The Building and Supply Committee of the Board of Supervisors, February 4, let contract for a double-faced steel case for record books, to be used in the County Clerk's office, to the Art Metal Company, Jamestown, N. Y., for \$1,025, the case to be delivered ready for use in sixty days; other bidders for the case were H. R. Mann, city, \$1,250, and the General Fire Proofing Company, of Youngstown, O., \$1,180.

TRADE NOTES

Cast-iron Pipe.—Chicago: Several good orders will be placed in the immediate future. Quotations: 4-inch, \$28; 6 to 12-inch, \$27; 16-inch and up, \$25. Birmingham: The market is strong and the outlook improves. There has been an increase in minor orders and prices are satisfactory. Quotations: 4 to 6-inch, \$26; 8 to 12-inch, \$25; over 12-inch, average \$24. New York: Quite a number of lettings are in sight. Needed extensions deferred last year are imperatively needed this year. Quotations: 6-inch, car lots, \$24.

Pig Lead.—The American Smelting and Refining Company on February 5 reduced its price for shipment lead in fifty-ton lots to 4.10c., New York. The last previous change was on December 22, when a reduction was made from 4.30c. to 4.20c. This interest is now the cheapest seller of desilverized lead. Soft Missouri brands, however, are obtainable in New York at 4.07½c. In St. Louis soft Missouri brands are quoted at 3.92½c.

Wire Glass.—Judge Buffington, of the United States Circuit Court for the Western District of Pennsylvania, at Pittsburg, has sustained the Schmertz patents on wire glass used as a fire retardant. The decision arose from the suit of the Mississippi Wire Glass Co. against the Pittsburg Plate Glass Co. and holds that the two forms of apparatus used by the Pittsburg Plate Glass Co. infringe the Schmertz patents.

Sewer Pipe.—The offices of the American Sewer Pipe Company will be moved from Pittsburg to Akron, O., according to a statement by President G. R. Hill. Mr. Hill, who was recently elected to the position by reason of the resignation of Frank Kondolf, resides in Akron. He stated that the headquarters would be moved to that point because it was desired to have the offices near some of the more important factories. Twenty-five per cent. of the company's product is turned out at the Akron sewer pipe plants, and the removal, it is argued, will facilitate the business such as to warrant the step. The change will take from Pittsburg about forty officers and clerks of the corporation who are now quartered in the Bessemer Building. The American Sewer Pipe Company owns a number of plants in the Ohio Valley not far from Pittsburg, Toronto, O., having been the center of the trade for a number of years. Gradually, however, operations have been extended in the direction of Akron, and the opinion is expressed that the party favoring the plants in that place now holds a commanding position in the corporation.

Ebonite.—A little booklet issued by the National Insulite Company, Aurora, Ill., tells some of the advantages claimed for their Ebonite Paint, which is intended to be used on metal surfaces. When used on exposed metal surfaces such as boiler fronts, stacks, bridges, etc., it will, the manufacturers claim, absolutely protect them from corrosion and remain in perfect condition regardless of temperature changes. Of particular interest to water works men is the statement that it will prevent electrolysis of metal pipes. A test made at the University of California demonstrated that a coating 1-100 of an inch thick was not penetrated by a current of 18,000 volts. If this is verified in practice, future installations of water pipe need not be endangered by electrolytic action.

Venezuela Asphalt.—The United States and Venezuela have reached an agreement on the long-standing dispute over the five American claims. William I. Buchanan, special commissioner, representing the United States in the negotiations, has notified the State Department that a protocol embodying the terms of the agreement has been signed and ratified by the Venezuelan cabinet. The American claims have been outstanding for several years, and their settlement clears the way for the resumption of friendly relations between the United States and Venezuela. While a complete report of the details of the agreement has not been received at the State Department at Washington, it is known that the claims of the New York and Bermudez Asphalt Co. have been settled by direct negotiations between representatives of the asphalt company and President Gomez. The terms of the agreement have not been cabled to the department. The New York and Bermudez Co. was dispossessed of its control of an asphalt lake known as La Felicidad some years ago. The Venezuelan Government placed the affairs of the company in the hands of a receiver, an act which was described by the company as a practical confiscation of its property. The Venezuelan Government justified its course by the charge that the company had instigated the Matos revolution. The asphalt company, it is said, is to regain possession of its property and to pay the Government a minimum revenue of \$20,000 per annum. In addition the company has agreed to pay to the Government \$60,000 to settle the suit filed by the Government against the asphalt company because of its part in the Matos rebellion. The claim of the Orinoco Steamship Co., to which had been granted exclusive right of navigation on branches of the Orinoco river, and the case of the Orinoco Corporation, which has concessions of iron mines, hardwood forests and asphalt deposits, will go to The Hague court for arbitration. The case of the United States and Venezuelan Co., which has never been arbitrated, will also go to The Hague court.

Pipe Plug.—R. C. McWane, 220 Broadway, New York, N. Y., manufactures a pipe plug which is so shaped that it can be removed by a few strokes of a hammer without any danger of breaking the pipe or special in which it is fitted. The plug is made with a groove along the side, into which a cold chisel may be fitted between the plug and the pipe. A few light blows does the rest.

Revolution Counters.—The Industrial Instrument Company, Foxboro, Mass., in Bulletin No. 16, describes its line of revolution counters, tachometers and tachographs. The first of these instruments indicates the revolutions in an interval of time; the second, the speed at the moment of observation, and the third records the rate of speed on a moving chart. Fluctuation recorders, which register on a moving chart the angular variations of speed during one or more revolutions, are also described.

Municipal Ice.—The Mount Vernon Utilities Corporation, of Mount Vernon, N. Y., former Mayor Brush's pet municipal ice plant scheme to free Mount Vernon from the grasp of the Ice Trust, has been finally and forever dissolved and the accounts of the receiver passed upon by the court. The small amount of cash on hand after winding up the affairs of the corporation has been distributed pro rata.

Tungsten Lamp.—Pamphlet No. 3728, just issued by the General Electric Company, Schenectady, N. Y., gives, by means of tables and curves, a brief exhibit of the value and economy of tungsten series street lamps, showing the marked saving over the carbon and Gem lamps and the possible gain in income. It shows the rate at which the tungsten lamp is able to compete with Wellsbach gas street lamps, the economical life of the tungsten lamp, the relative cost of producing a candle-hour of light with the tungsten as compared with the carbon and Gem, and the candle-power and life performance of the tungsten series lamp.

Garbage Destructors.—Heenan & Froude, Ltd., Engineers, of Manchester and Worcester, England, have been awarded a bronze medal by the Royal Sanitary Institute in connection with the model of a refuse destructor exhibited by them at the Health Exhibition, held at Cardiff, Wales, July, 1908.

Sprinkling Wagons.—E. D. Etnyre & Company, Oregon, Ill., manufacture a sprinkling wagon which has many desirable features. A steel tank is mounted on a steel frame with platform gear. Tanks are furnished in any desired size. All wagons are provided with the Etnyre patent sprinkling valve either vertical or horizontal spray, as desired. This valve is so built that it will not leak when closed, and with it a width of roadway from three to thirty-five feet can be covered. Being provided with slots for the passage of water, there is no danger to clogging. The valve can also be opened in such a manner as to permit any rubbish that may have gathered in the tank to be washed out. The control is entirely from the seat by foot pedals and is easy of operation. The vertical spray makes it possible to come up square to cross-walks without wetting them and without danger of wetting pedestrians. One type of wagon is fitted with particularly broad tired wheels for use on boulevards when desired.

PATENT CLAIMS

911,131. **Earth Excavator.** Horace W. King, Echo, Ore. Serial No. 422,369.

The combination with a wheeled frame or platform of a swinging arm, a rotary cutting device carried by the free end of said arm, a pivot allowing the arm to move horizontally, a pivot allowing the arm to move vertically and an engine carried on vertically moving section of said arm to operate said cutting device.

911,196. **Street-Sweeping Apparatus.** George W. Baker, Clarence W. Baker and Roderrick McLennan, Ballston Spa., N. Y. Serial No. 403,364.

A street-sweeping machine, comprising traveling wheels, an axle on which said wheels are journaled, a framework on which said axle is mounted, said framework embodying a series of spaced portions, each of which consists of an upper longitudinal beam provided with an extension projecting forwardly beyond the traveling wheels, a lower longitudinal beam, oblique braces extending forwardly from the axle and secured to the front extremity of the forward extension, and a series of vertically extending standards connecting the upper and lower beams, gear wheels mounted on the axle, similar gear wheels mounted in the rear of said gear wheels and meshing therewith, sprocket wheels mounted on the same shaft as said similar wheels, a cylindrical brush, a shaft on which said brush is mounted, said shaft being journaled in the lower longitudinal beams, sprocket wheels on the shaft, chains connecting the sprocket wheels with the first-named sprocket wheels, a roller mounted on the axle, another roller mounted on the framework between the axle and the brush, an elevating conveyor mounted to travel around said last-named rollers, a discharge elevator comprising a roller mounted on the front extremities of the forward extensions of the upper longitudinal beams of the framework, another roller

journaled in the framework below the upper end of the elevating conveyor, and an endless carrier provided with cleats and mounted to travel around said two last-named rollers, sprocket wheels movable with the roller that is underneath the elevating conveyor, other sprockets mounted on the framework and having a chain connection with the sprockets just mentioned, idler gear wheels movable with said last-named sprockets, and other gear wheels mounted on the main axle and meshing with said last-named gear wheels.

911,256. **Meter Box.** Henry E. McWane, Lynchburg, Va., assignor to Lynchburg Foundry Co., Lynchburg, Va., a Corporation of Virginia. Serial No. 417,092.

A box of the character described, comprising a tubular body having an open upper end provided with inset lugs at its upper margin, said lugs having their under edges inclining downwardly and terminating in depending stops, a closure for the upper end of the body, comprising a plate having its margins resting on the top edges of the body and having a depending flange inside the margin that fits within the body, said flange being cut away to receive the inset lugs and said lugs constituting substantial continuations of the flange sections when located in the cut-away portions, a bolt journaled in the closure, a locking bar secured between its ends to the lower end of the bolt and located beneath the under side of the closure, said bar and bolt being fixed against relative rotation and the bar rotating beneath and with respect to the closure upon the rotation of the bolt and having its ends operating below the under side of the flange and against the lower inclined edges of the lugs, and other lugs depending from the flange of the closure for limiting the movement of the locking bar.

911,375. **Garbage-burner.** John A. Burwell, San Antonio, Tex. Serial No. 453,449.

In a refuse burning apparatus the combination of a furnace chamber, a cylindrical grate therein comprising circular end plates rotatably mounted in the furnace walls, and having removable sections, grate bars connected to said end plates, and sectional grate bars connected to said removable sections, substantially as described.

911,368. **Road-Culvert.** Louis Blakestad and Ole A. Anderson, Lyle, Minn. Serial No. 464,773.

In a road culvert, two hollow members which lap, cleats which are disposed longitudinally of the members and within and without them respectively across the joint made by the two members, and members by which the cleats are secured to the hollow members.

911,445. **Composition Roadway.** Benjamin F. Richardson, Philadelphia, Pa., assignor to The Filbert Paving and Construction Company, Wilmington, Del., a Corporation of Delaware. Serial No. 457,482.

The process herein described of resurfacing Macadam or Telford roads, said process consisting in first cleaning the surface of the old roadway and bringing it to the grade and crown desired by rolling, then applying to the prepared surface one-quarter inch thickness of hot asphalt cement, then applying broken stone of about one inch thickness, rolling said stone surface, then applying screenings to about one-half inch in thickness, and finally rolling the surface of screenings so as to produce a smooth roadway with the proper crown and thoroughly compact the stones and screenings.

911,628. **Lift-Bridge.** Eric Swensson, Minneapolis, Minn. Serial No. 405,697.

A bridge of the class described comprising a span having a roadway and towers having portals forming continuations of said roadway on which towers the said span is journaled, counter weights for said span and means for swinging said span laterally to an inverted position to open the bridge.

911,641. **Liquid-Meter.** Eugene L. Barnes, Detroit, Mich., assignor to Central Station Steam Company, Detroit, Mich., a Corporation of Michigan.—Serial No. 398,490.

In a liquid meter, the combination of a revoluble drum, an axial liquid inlet; partitions within said drum dividing the same into a plurality of compartments successively communicating with said inlet; peripheral discharge connections to each compartment leading back to a point angularly removed therefrom, said connections communicating with their respective compartments at points inward from the periphery whereby a portion of the liquid is trapped and temporarily delayed from discharging.

911,649. **Equalizing Multiple Air-Lift for Deep-Well Pumping.** Robert H. Elsey, Coalinga, Cal. Serial No. 439,933.

An air lift for deep wells comprising a casing, an air tube therein having air holes at spaced intervals thereon, sleeves disposed over said holes and spaced from said tube, and means for supplying air pressure to said tube, as set forth.

PROPOSALS

BRICK AND MACADAM PAVING

Corning, N. Y.

The Board of Public Works of the City of Corning, N. Y., will receive proposals until 7:30 P. M., Thursday, March 4, 1909, for building about one-quarter mile (3,600 square yards) brick pavement with cement curbs and gutters, and also for one-quarter mile (4,300 square yards) macadam pavement with cement curbs and gutters. Proposals may be made separately for the two kinds of pavement, and must be accompanied by a certified check for \$250 payable to the City of Corning, N. Y.

Plans and specifications can be seen at the office of R. H. Canfield, Superintendent of Public Works, Corning, N. Y.

The Board reserves the right to reject any or all bids and to increase or diminish the amount of work to be done.

Address proposals to W. C. Sleight, Clerk of the Board of Public Works, Corning, N. Y. (6-3)

ELECTRIC LIGHTING

Kenosha, Wis.

The city of Kenosha, Wis., is open for propositions for furnishing us electric street lighting. Can grant rights for electric commercial lighting for stores and dwellings, also power for factories. An excellent opportunity for any company that can furnish same at the right price.

We are also open for propositions to build us a municipal plant for our street lighting. Population 25,000. Address

Ald. PETER PIRSCH,
Chairman of Committee. (4-7)

ELECTRIC LIGHTING

Sumter, S. C.

Bids will be received until 12 o'clock, noon, Tuesday, March 9th, 1909, for furnishing the City of Sumter with fifty enclosed incandescent arc lights, 6.6 amperes, 2,000 nominal candle power. All within a radius of one mile from center. All night service. Also prices on additional lights as needed, above fifty and not exceeding eighty. Contract to run ten years from Nov. 1st, 1909.

Address C. M. HURST,
Clerk and Treasurer.

STREET IMPROVEMENTS

Waukesha, Wis.

The Board of Public Works of Waukesha, Wis., will receive bids, at their office, on Friday, February 26th, 1909, at 2 o'clock P. M., for street improvement work, consisting approximately of 10,000 cubic yards of excavation; 18,000 linear feet of combination curb and gutter and 26,000 square yards of macadam with tar surfacing. Estimated cost \$40,000. Plans and specifications on file at office of the Board.

JOHN P. DEY, Chairman.

SEWER SYSTEM AND PUMPING PLANT

East St. Louis, Ill.

Proposals will be received by the Board of Local Improvements of the City of East St. Louis, Illinois, until 12 o'clock noon, February 17th, 1909, for the construction of a system of concrete and pipe sewers and a sewage pumping station as follows:

One pumping station building and appurtenances.

Five drainage and two sewage pumping engines to be vertical, single acting gas engines, direct connected to horizontal shaft, centrifugal pumps.

Thirty-three thousand and five hundred linear feet of sewers varying in diameter from 3 to 10½ feet.

The work will be paid for in cash or bonds. Specifications, plans, form of proposal and other information may be obtained from the Engineer of said city upon a deposit of \$5.

W. J. CROCKEN, City Engineer.